LOGic 4

PC POWER FOR YOUR SHACK

BASIC OPERATIONS

Running LOGic 4 DOS with 2mb of RAM

LOGic 4 features advanced memory management that accesses your computer's extended memory without any special memory manager setup. This memory is used for temporary storage and index caching for optimal performance. Additionally, the program itself executes from extended memory. This eliminates any problems that many programs experience when insufficient DOS 640k memory remains due to having many resident programs and drivers loaded, or poor utilization of memory due to improper system setup. This advanced memory management requires 3mb of total system memory to operate.

However, LOGic 4 will run respectably well on a 386sx or better computer with 2mb of total system RAM using an Expanded memory manager such as EMM386.EXE, which is provided with DOS. If you have only two mb of RAM, obtain an EMS Libraries Disk from PDA (it is included with your order if you specified that you have 2 mb of RAM). Follow these instructions:

•Edit your CONFIG.SYS file. Go to the root directory of your C: drive, and type

    EDIT CONFIG.SYS

Check for the following commands that enable Expanded memory:

    DEVICE=C:\DOS\HIMEM.SYS
    DEVICE=C:\DOS\EMM386.EXE MIN=0 RAM

If these statements do not exist, add them at the beginning of the file. If you are using a version of DOS prior to 6.0, replace MIN=0 with 1024.

Free up as much of your DOS 640K as possible by running MEMMAKER (DOS 6), or by manually using the LOADHIGH and DEVICEHIGH commands with DOS 5. Remove any unneeded TSRs and resident programs. You may have to remove SMARTDRV, or limit the amount of RAM it uses.

Reboot your system.

•Install LOGic as per the instructions in the manual. However, do not attempt to run the program typing PDA at this time.

•After installation completes, put the EMS Library Disk in drive A:. While still in the LOGIC4 directory, type

    A:\LIBSEMS

If you are using drive B:, substitute accordingly. This will install the Expanded Memory libraries.

•Type PDA to run LOGic.

To uninstall the EMS libraries so that LOGic will run in the normal extended memory mode, erase the files FOXD250B.ESO and FOXD250B.ESL. You may also type PDA +X.
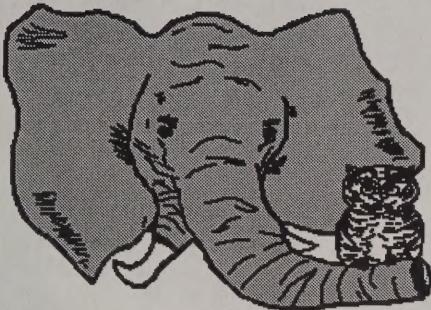
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LOGic Jr. and LOGic 4 Update

These are instructions for installing updates to LOGic 4. If you need assistance, email us at logic.support@hosenose.com, or call our tech support line at 770-307-1496. If no answer, please try later.

Run the DOS command line, and make your LOGic directory current. If you have Windows and the DOS add-on, install the update in the LOGic Windows directory. For example:

```
CD \LOGICW          (Windows)
CD \LOGIC4          (DOS)
```

If you have purchased the Awards and Prefix Table updates, and wish to keep a copy of your originals, you may make a copy now:

```
COPY AWARDS.DBF AWARDS2.DBF
COPY PREFIX.DBF PREFIX2.DBF
```

Insert the UPDATE disk in drive A: or B: and run UPDATE. For example, if your update disk is in drive A:, execute the following command:

```
A:\UPDATE
```

If you are using drive B:, substitute accordingly.

Answer Y to all **Overwrite?** prompts. Your log data and configuration will not be affected.

If your current version of LOGic for Windows is prior to 4.0b dated JUN/16/94, two Library Disks are included. Install these just like the update disk (type A:\UPDATE).

After the update finishes, type CLEAN. This removes outdated scratch and index files that the new version of LOGic must recreate.

Insert your **LOGic License Disk** in drive A: or B:. Run LOGic. After LOGic loads, remove your LOGic License Disk and place it in a safe place.

Go to the **Ham Setup** menu, and select **Miscellaneous Utilities**. Select **UPDATE.FXP**.

This completes installation.

You may recover awards from your awards table by running the IMPAWRD miscellaneous utility, or recover your complete original tables by copying the backups you made earlier.

```
COPY AWARDS2.DBF AWARDS.DBF
COPY PREFIX2.DBF PREFIX.DBF
```
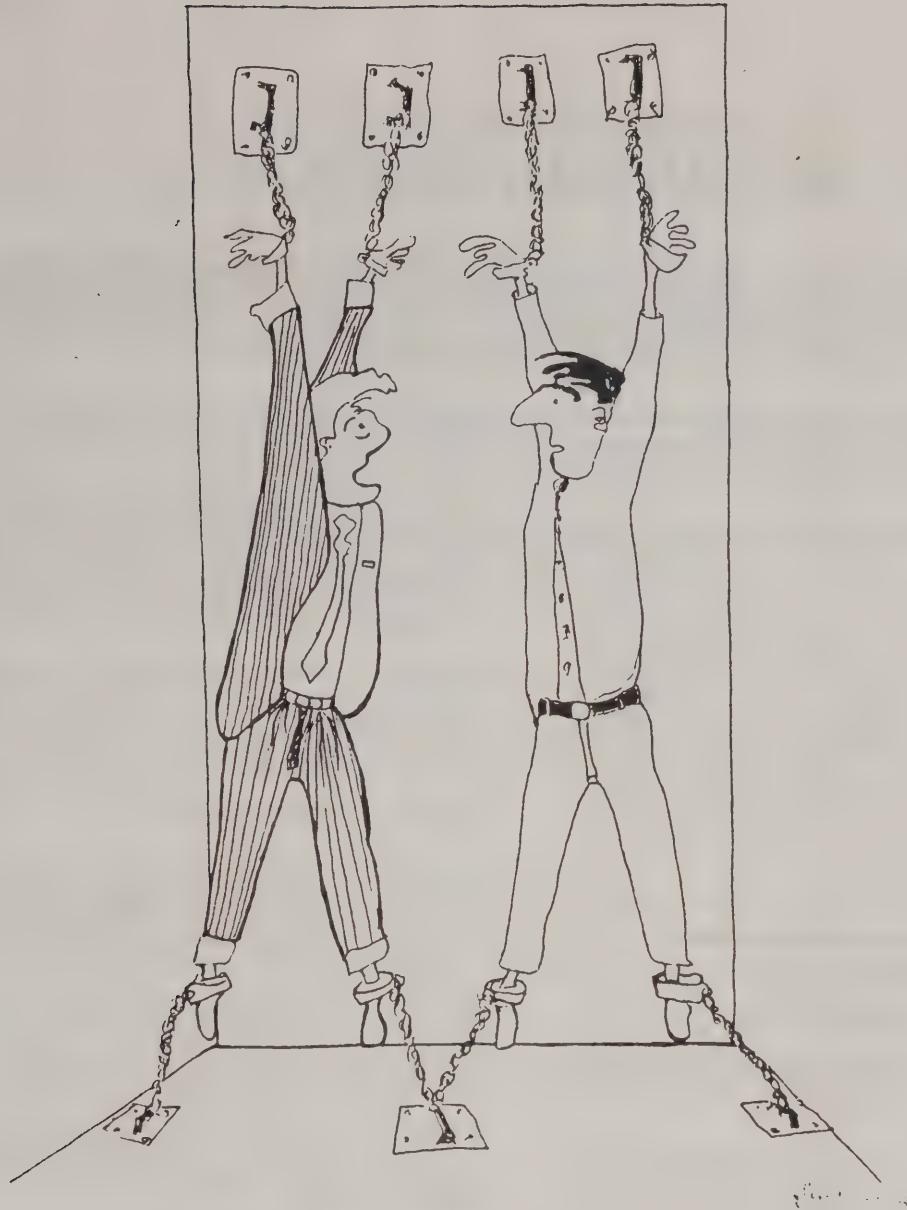
"Did you forget to Do a Backup too?"

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Acknowledgements

IMPORTANT NOTICE

LOGic 4 Installation

LOGic 4 requires seven megabytes of free disk space for installation. The installation program will check to see that you have enough space. Write-protect all diskettes by making the write-protect window is open. If you need help, see the first chapter of the manual for the tech support phone number.

> If you are upgrading from LOGic 3 or a previous version, proceed to install LOGic 4 in a new, separate directory. See the online help for information on importing your data. Select HELP from the ACC pad on the menu bar.

Follow the appropriate instructions for Windows or DOS:

Windows

Exit any programs you have running under Windows. Insert the LOGic Main Disk in drive **A:** or **B:**. Select **Run** from the **File** menu pad of the Program Manager. Type:

<p align="center">A:\SETUP   or   B:\SETUP</p>

Press **{Enter}**. Follow the instructions that appear on your screen. After installation completes, insert the **LOGic License Disk**. Double-click the LOGic icon.

> If you do not like the size of the fonts or windows, they can be changed! See section 12.2 of the manual.

For best performance, it is highly recommended that you install a permanent swap file that is two to three times the size of your system's RAM. See your Windows documentation.

DOS

Make sure that FILES= is set to 55 or more in your CONFIG.SYS file. If it is not, LOGic will detect this and allow you to edit your COONFIG.SYS file when you run it.

Insert the LOGic Main Disk in drive **A:** or **B:**. At the DOS prompt type:

<p align="center">A:\SETUP   or   B:\SETUP</p>

Press **{Enter}**. Follow the instructions that appear on your screen.

After installation completes, insert the **LOGic License Disk**. To run LOGic, type **PDA**. Press **{Enter}**. There will be a delay the first time you run the program while indexes are being built. After the program loads, remove the License Disk and store it in a safe place. You will need it if you install LOGic again.

LOGic loads with the highest screen resolution available. If you do not like the small type, run LOGic by typing **PDA 25**.

TABLE OF CONTENTS

I. GETTING STARTED

Thank you for purchasing LOGic. You now have the most sophisticated and versatile amateur radio software available. It will greatly increase your enjoyment of all aspects of amateur radio. You will use it to log your contacts, manage your QSL cards, automatically track any award, aim your antenna, and much more.

This manual covers operation of LOGic Jr. and the basic features of LOGic 4. If you have purchased LOGic 4, see the *LOGic 4 Advanced Operations* manual for features specific to LOGic 4, such as contesting, radio interfacing, advanced report writing, rotor control, and interfacing to external callbook databases.

This chapter will familiarize you with LOGic's menus, windows, and other basic elements. LOGic 4 is available for Microsoft Windows or DOS. Windows users will find much of LOGic's operation to be familiar. **The DOS version of LOGic features a windowed interface with full mouse support, and in fact operates almost like a Windows application. If you are a DOS user who is not familiar with using a windowed program, be sure to read the section on windows in this chapter.**

> *Hosenose says:* Don't be afraid to experiment with LOGic. You cannot damage your computer by typing in the wrong thing. LOGic has many safeguards to protect your data.

While this manual is a handy reference tool for experienced users, it is written primarily as a tutorial. It will be much easier to understand if you install LOGic as per the installation instructions, and have it running while you read this manual.

1.1. Prerequisites

This manual is written with the assumption that you know the basics of operating your computer, and that you understand the basic terms and operating procedures of amateur radio. If you are new to computers or amateur radio, we recommend that you read some introductory books on these subjects.

If you plan to use a mouse with LOGic, we assume that you are familiar with standard mouse operations such as clicking, double-clicking, and dragging.

1.2. Conventions Used in This Manual

This manual will frequently make reference to special keys on the IBM keyboard. These keys are indicated with a short description enclosed in squiggly brackets. For example, {Enter}, {Tab}, and {Space}. {F1} through {F10} refer to the function keys.

Sometimes you are required to press two keys--{Shift}, {Ctrl}, or {Alt} in conjunction with another key. These keystrokes are indicated with both keys separated with +. For example, {Shift+F1} means to hold down the shift key and then press function key 1. {Alt+L} means to hold down the Alt key while typing L.

Anything that you are required to type is printed in a distinct typeface. For example:

Type COPY ALL TO BACKUP and press {Enter} to make a copy of all QSOs.

Anything displayed by the computer will be printed in a bold typeface. For example:

LOGic will display the country name. For example: **MALTA**.

{←} refers to the left-arrow key, not the {Backspace} key.

All references to a mouse button refer to the **left** button unless otherwise specified.

1.3. Online Help and Documentation

Much of LOGic's documentation is online. Most of the information in this manual is included in the help facility, and it includes some necessary information not found in this manual. For example, all information related to interfacing to specific third-party products -- callsign databases, radio and antenna rotor interfaces, etc. -- is documented in the online help. This information is easily retrieved by a push of a button when in the field requiring it, and may be easily kept up to date.

Additionally, there are a number of technical articles that are not included in the manual. There is much general information that is not related directly to LOGic, such as general software troubleshooting tips, RS-232 pinout diagrams, and more.

LOGic incorporates a comprehensive *contextual* help facility. This means that pressing the help key, which is function key 1, will display information specific to the current menu or field. You do not have to look up the desired information on an online manual. To activate online help, press the {F1} key. Information for the current menu or field will be displayed. If there is so much information that it cannot all be displayed in the help window, a scroll bar will appear to the right of the window. Press the {PgDn} key or move the scroll bar by dragging the button with the mouse to see the additional information.

Many help topics will refer you to additional topics. When this is the case, the **See Also** box will be active. Type S to see a list of related topics. Select the desired one with the arrow keys and press {Enter}, or select the **See Also** box by placing the mouse cursor on it and holding down the button, then moving the mouse cursor to the desired topic.

In addition to contextual help, the online help facility contains information not included in the manual, such as data on recent program changes and technical computer and ham radio-related info. You may view a list of topics by pressing {F1} and selecting the **<< Topics >>** button with the mouse, or by typing T. You may go directly to the topics list by selecting **Help** from the **Acc** menu pad which appears on the menu bar at the top of the screen. See page 7 for more information on using the menu bar. You may page through the list of topics, and read the desired information by placing the high-lighted bar on the desired topic and pressing {Enter}, or double-clicking the desired topic with the mouse.

You may search through the Help and Online Documentation to locate all topics or help text that includes a specific keyword or all or any one of several keywords. When the Help window is displayed, select the **Help** menu pad from the menu bar. A popup appears from which you may select certain categories to be displayed, or select **Search** to do a keyword search of all online help and documentation. Select **Help** from the popup for more information on the help facility.

1.4. Getting Personal Help

Assistance is readily available to help you enjoy LOGic. Remember that LOGic's online help and documentation facility will answer many of your questions and provide some of the more technical information not provided in the manual. Just press {F1}. If you need personal assistance, call our

tech support line at ~~404-417-1899~~. While this line is staffed on an average of over 8 hours per day, we do not always have a tech support person available. So, if you receive no answer. just try later. We frequently have evening coverage for your convenience. ***We cannot accept technical support calls on our office line.*** Collect calls are not accepted. When calling, please try to be at your computer, and have it running. We may ask you some questions to verify that you have purchased LOGic. Please note that we close at noon on Friday.

Although telephone is usually the most economical and speedy way to handle your questions, you may also obtain assistance by mail or fax. *Be sure to fully explain your question or problem*. document the procedures you went through, and send any screen printouts, etc. that will assist us in helping you. If you simply state that you cannot get LOGic to run or you cannot get LOGic to do such-and-such, we will not be able to help you. An SASE is not required, but will speed your reply.

Now we will proceed to learn how to use LOGic.
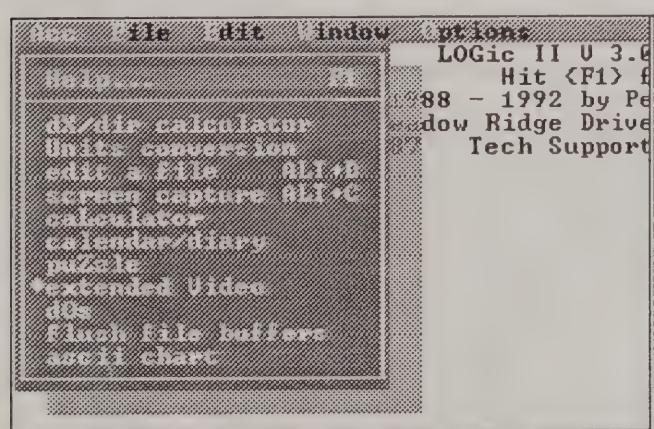
Fig 1 *LOGic's menu bar and Accessories Menu popup.*

1.5. Menu Bar and Menu Popups

LOGic has a menu bar that is displayed at the top of the screen. The menu bar is used to access LOGic's many options and features. New options will appear and disappear to provide access to options that are specific to certain screens. Individual menu bar functions will be discussed later. The purpose of this section is merely to discuss how to access the menu bar options with the mouse and keyboard.

The menu bar options (Acc. File, Edit, Window, and Options are shown in Fig 1) are called ***menu pads***. To select a menu pad with the mouse, simply place the pointer on the pad and press the mouse button.

There are several ways of selecting a menu pad using the keyboard. If the menu option has a highlighted capital letter in its name, simply press {Alt} and that letter. For example, {Alt+A} activates the Accessories menu pad. You may also access a pad by tapping the {Alt} key, or the {F10} key. The first menu pad will be highlighted. Select the desired pad with the {→} and {←} keys. Also note that each pad has a highlighted letter. Instead of using the {→} and {←} keys, you may select the pad by typing the highlighted character after hitting {Alt} or {F10}.

Most (but not all) menu pads have ***menu popups*** that appear when they are selected. When using the mouse, the menu popup will appear when you press the mouse button. Simply move the mouse pointer down to the desired option and release the button.

When using the keyboard, you may select menu popups with the {↓} and {↑} keys. Some options have a capital letter in their name. These may be selected by typing that character.

Note that some options have a key name to their right. These are ***hot keys***. You may access these options by typing the indicated key *without activating the menu popup!* The {F1} key for help is one such example. Sometimes two options will have the same hot key. For example, the illustration shows that {Alt+C} activates screen capture. However, {Alt+C} is also used to access an optional online callbook from the LOGic 4 logging screen. Therefore, when you are in the logging screen, you must access screen capture using a method other than the hot key.

1.6. Windows

To provide maximum flexibility and ease of use, LOGic provides a windowed interface. For instance, you could have a window displaying log information for the station you are in QSO with, another window showing a record of the last few QSOs, and an edit window displaying the station's address, all displayed at the same time. All screens and accessories are displayed in separate windows that may be repositioned at will. Many windows can be resized or removed from the screen altogether.

Users familiar with Microsoft Windows who have the Windows version of LOGic can skip this section, although it is a good, short review. DOS users must read this section.

Although all of LOGic's features may be accessed solely with the keyboard, the best way to perform some window manipulations is with a mouse. Let's practice. Using the Accessories menu pad, open the Calculator and Help windows. We now have four windows on the screen--Main Menu, Clock,

```
                              Help

    HAMTECH: Icom radio interface info
    HAMTECH: Ten-Tec radio interface info
    HAMTECH: RS-232 pin-outs
    HELP: Awards Screen
    HELP: Awards Screen - Comment
    HELP: Awards Screen - Country
    HELP: General Setup - Sticky bar menus
    HELP: Main Menu and Introduction
    HELP: Main Menu - Logging Screen
    HELP: Main Menu - Quit
    HELP: Screen Config - Input Fields*
    HELP: Screen Config - Select Fields
    HELP: Utilities Menu
    HELP: Utilities Menu - General Options
    MANUAL: Color Sets
    REPORT TECH: Printer Driver Variables

                            < Help >
```

Fig 2 *A window with a full complement of gadgets*

Calculator, and Help. We will learn more about how to use these particular windows later. For now, we just need some windows to practice on.

Here are some things you can do with LOGic's windows, and how to do them. First, we will discuss mouse usage, and only mention keyboard equivalents when they may have advantages over using the mouse. Even if you don't have a mouse please read this section anyway, because, as we will soon see, all of these operations may also be done with the keyboard:

The windows LOGic for Windows and LOGic for DOS work similarly. However, there are some differences as will be noted below.

Select: LOGic always has an active window. It is indicated by a highlighted title. Try selecting various windows by clicking anywhere on them with the mouse. It is the active window that accepts keyboard input. For instance, if the Calculator is the active window, your typing will go into the calculator. However, if the Clock is the active window, your typing is lost. If you try typing anything while the Clock is active, your typing will be ignored, because the Clock is not designed to accept keyboard input. With the keyboard, press {Ctrl+F1} to cycle through active windows. This is a good way to look for windows that have gotten covered up by other windows.

Move: To move a window, place the mouse pointer on the top border. Press the button and drag the window to the desired location. Note that windows may be moved partially off of the screen.

Resize: Some windows may be resized. These windows will have a resize gadget in the lower righthand corner. Place the mouse pointer on the gadget, press the button, and drag the resize gadget to the desired position. Practice resizing the Help window. Windows users may resize windows by dragging any of the windows four borders.

Zoom: Windows that can be resized will have a gadget in the upper righthand corner. Clicking this gadget will cause the window to expand to occupy the whole screen. This is called *maximizing* a window. Clicking it again will return it to its previous size. Try zooming the Help window.

Minimize: Some windows can be minimized so that they only appear as a small icon on the screen. Windows users click the down-pointing arrow in the upper righthand corner of the window. DOS users double-click the top border. Double click the icon to unminimize the window.

Scroll: Some windows may be scrolled when they contain too much data to be displayed. Note the bar on the right of the Help window. Drag the button with the mouse to scroll. The Help window may only be scrolled vertically. However, some windows may be scrolled horizontally, or *both* vertically and horizontally. You may also scroll with the arrow keys and the {PgUp} and {PgDn} keys. Practice scrolling the help window.

Close: Some windows may be closed. Most windows that accept keyboard input may be closed by typing {Esc}. Some windows may be closed with a mouse. These windows will have a close gadget in the upper lefthand corner. Simply click on the gadget with the mouse.

1.6.1. Keyboard Usage

Although moving, selecting, and resizing windows is most easily done with the mouse, the `Window` menu pad allows you to accomplish these and other operations with the keyboard. The `size` and `move` options cause the window border to flash. Use the arrow keys to make the size or position change, then press {Enter}.

1.7. File Selector

Some of LOGic's features require that you select a DOS file. LOGic's file selector makes this easy. With it, you may view a menu of your files and select the desired drive, directory, or filename using the mouse or keyboard. Let's practice using the file selector. Select `edit a file` from the Accessories menu popup.

Files for the current directory are displayed in the window. Subdirectory names are show in (**parentheses**). The parent directory is represented with (..). With the mouse, select the desired file or directory by double-clicking it. If you click on a file, its name will be placed in the `File Name:` field. Click `<< OK >>` or press {Enter} to select the file. If you select a directory, the contents of that directory will be displayed. Press {Esc} or click `< Cancel >`.

The file selector is also easily navigated with the keyboard. Move from field to field with the {↓} and {↑} keys. To select a file, place the cursor in the `File Name:` field and press {Enter}, or press {Ctrl + Enter} from any field. Move the cursor to the file menu by pressing {↑}. Highlight a file by typing the first few characters of its name, or by using the {↓}, {↑}, {PgUp}, and {PgDn} keys. Press
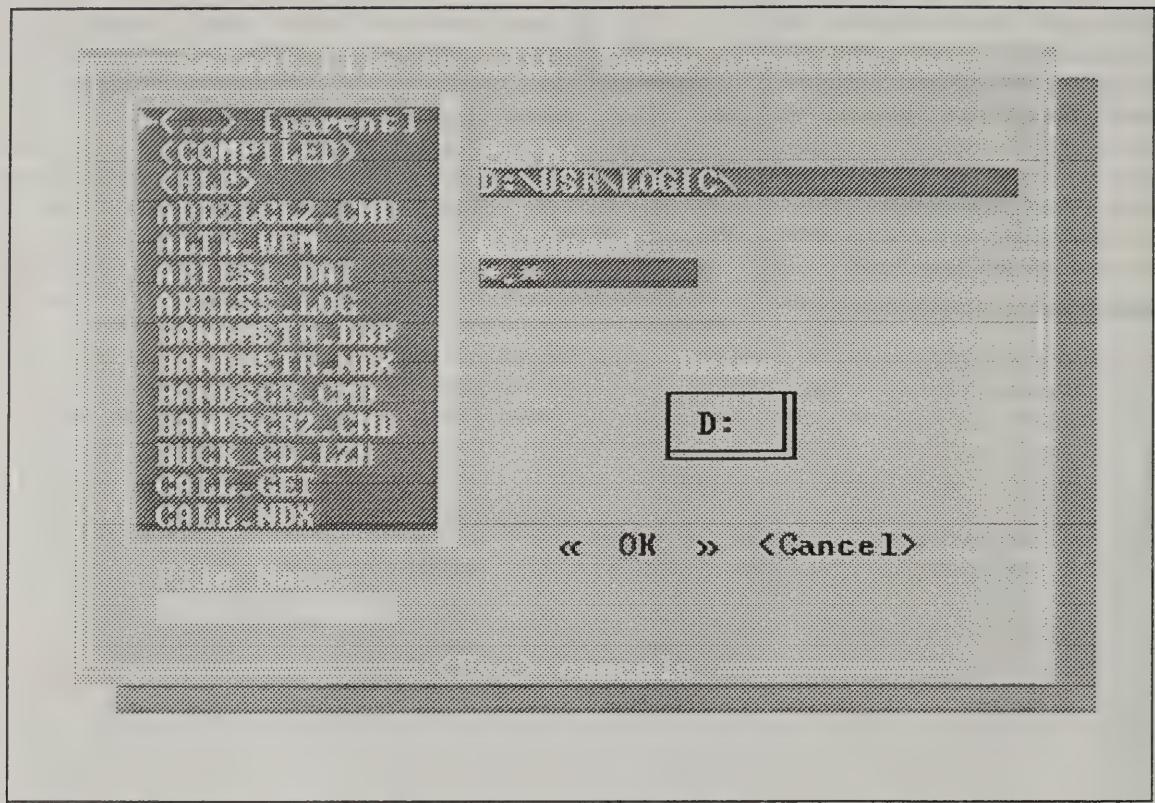
Fig 3 *LOGic's file selector*

{Enter} to make your selection.

The appearance and functionality of the file selector will change slightly depending on the option. For instance, if an option does not allow you to create a new file, the **File Name:** field will not be present. Likewise, the fields and buttons for changing the drive, directory, and wildcard specification may be disabled.

Online help is provided by pressing {F1} while the file selector is visible.

1.8. Edit Windows and Editing

LOGic makes extensive use of **edit** windows for manipulating freeform text such as notes and addresses. This editor sports a full complement of features such as cut, paste, search, and replace. Text may also be saved to a file. LOGic 4 users will find the cut and paste feature great for transferring data from the communications capture window to the Notes window of a QSO.

Select **edit a file** from the **Accessories** pad, and enter TEMP.TXT in the **File Name:** field. An edit window will appear. Type in a paragraph or so of text. Note the auto text wrap function. You do not have to hit {Enter} at the end of each line. To select text to cut or copy, hold the mouse button down and drag the pointer. Keyboard users may hold the {Shift} key down while using the arrows or {PgUp} and {PgDn} to move the cursor. The **Edit** menu pad accesses cut, copy, paste, and other edit options.

The Windows version of LOGic uses the Windows clipboard so that you may cut and paste between LOGic and other programs. Windows also features drag-and-drop text editing. This allows convenient moving of a block of text within the same document. Highlight a region of text by dragging the mouse across it. Release the mouse button and press it again. Drag the block of text to the new location.

To close an edit window, click on the close gadget, or type {Ctrl+W}. Pressing {Esc} will abandon any changes.

Some LOGic edit windows are used to display information such as a long list of awards progress info or a report "printed" to the screen. You may not type data in these windows, which have [read only] in their title. You may copy text from these windows to paste elsewhere. You may also use the File menu pad to save the contents of these windows to a file.
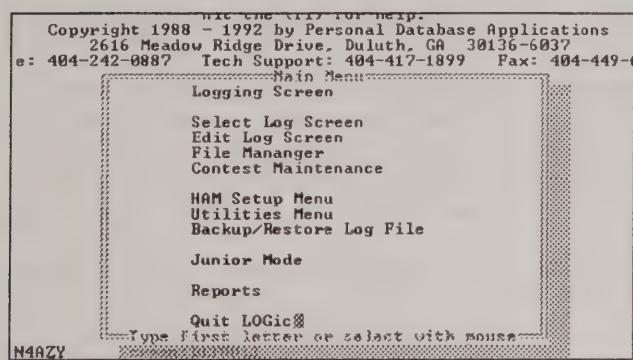
Fig 4 LOGic's main menu

1.9. Menus

Menus are used to select the area of the program you want to access. To select an option, simply type the first letter of that option, or click on the option with the mouse.

Menus are displayed in boxes near the center of the screen. Do not confuse them with the menu bar, which is described above.

1.10. LOGic Jr. Mode

If you have purchased license for LOGic 4, it will have a **Junior Mode** option on the main menu. Selecting this option will make LOGic 4 behave as if it were LOGic Jr. Menu and screen options related only to LOGic 4's advanced features will be removed. We recommend selecting this option while going through this book for the first time, so that the illustrations will more closely match what you see on your screen. The Jr. Mode feature is also handy for easy learning of LOGic's basic features.

To get back to LOGic 4 mode, simply quit and rerun the program. If you want LOGic Jr. mode, you will have to select it each time you run the program. however, you will find that after a few hours of using LOGic Jr., you will feel comfortable with it and be ready to take advantage of LOGic 4's features.

1.11. Miscellaneous Info

When you type something in an edit window or data field, the character is always placed where the cursor is positioned. Normally, any data to the right of the cursor is moved to the right to make room for the new character. This is called *insert mode*. LOGic also supports *overwrite mode*. To enable overwrite mode, press the {Insert} key. Note how the shape of the cursor changes to a block. Now, anything you type will cover what was there before. Press {Insert} again to get back to insert mode.

Pressing {End} will move the cursor to the end of the line in an edit window, or to the end of the last character entered in a data field.

Many of LOGic's data fields will hold more information than can be displayed. In these cases, the field will scroll to the left as you enter data. To quickly move to the end of these scrollable fields, press {End}.

The *cut* and *paste* features of the edit window will also work for data fields on the Log and other screens. You may cut and paste between fields, or between edit windows and fields. The *cut* feature

will work only on edit windows and data fields. DOS users may cut any rectangular area of any window or screen using the **screen capture** accessory, and paste it as usual.

Buttons are short descriptions of options enclosed in angle brackets. For example, < **Cancel** >. To activate a button, click on it with a mouse.

Some buttons are enclosed in double angle brackets. For example, << **OK** >>. These buttons can be activated by pressing {Enter}. Most buttons have keyboard equivalents that are spelled out on the window. If there are no keyboard equivalents, the buttons may be activated by moving the cursor on top of them with the arrow keys, and pressing {Enter}.

II. SETTING UP FOR YOUR STATION

Before you can start using LOGic, you must tell it a few things about yourself and your station. The ham setup menu selects LOGic's configuration options that relate to ham operations. Select **Ham Setup** from the Main menu. The Ham Setup menu will appear. Select the **General Ham Setup Screen**.

2.1. General Ham Setup Screen

The General Ham Setup screen is used for entering miscellaneous information about your station and operations. There are many options on these screens which will be discussed elsewhere. The online help facility provides much information about this screen. Press {Tab} or the up and down arrow keys to move from field to field. {PgUp} and {PgDn} move from window to window. Press {Enter} to save your changes. For now, enter the following information:

•*The modes that you operate* Most popular modes are listed already. Delete the ones that you don't use, and add any new ones that you need. Make sure that a comma separates the different modes. Do not log USB or LSB. Use SSB instead. If you use LSB and USB, LOGic's awards tracking will treat them as separate modes! *When changing this mode list, be sure to do an Awards Progress Update!* See page 33, 41.

•*Your call*

•*UTC offset in hours* This setting tells LOGic how to determine Coordinated Universal Time from your system clock, which should be set to local time. Enter the number of hours to add to your system clock to get UTC. Stations whose time is earlier than UTC will enter a negative number here. Here are some examples: EST: 5. CST: 6, MST:7, PST:8. Subtract 1 hour for daylight savings time. England, enter 0. Most of the rest of Europe, enter -1.

> *Hosenose says:* If you set your computer's clock to UTC, enter 0 for the UTC offset. However, this is not recommended, because LOGic's time difference feature, which tells you the number of hours time difference with the station you are talking to, will not work. It will give the other station's time difference from UTC instead of your timezone.

LOGic does not automatically adjust for adjustments to local time such as Daylight Savings Time, European Summer Time, or Israeli Summer Time. When adjusting your computer's clock, be sure to change the UTC offset.

•*Your DXCC prefix* Stations in the USA enter K. Canadians enter VE. Operators in other countries enter their prefix as it appears in the awards table (see page 31). If you are not sure what to put here, leave it blank. This option prevents LOGic Jr. from logging ITU and CQ zones when logging QSOs with stations in your country.

•*Your continent*

•*Default power* The value entered here will automatically be logged in the **PWR** field of the log screen. Leave this blank if you do not want to log transmitted power.

Ignore the **User-defined Fields** window for now. We will discuss it later (see page 27 and 32).

Enter your name and address, and a line of information about your station to appear on QSL cards.

Press {Enter} and select **Save** to save your changes.

2.2. DX and Direction Update

In order for LOGic's automatic DX and direction display to function properly, LOGic must know where you are located. Select DX and Direction Update and enter your latitude and longitude in decimal degrees. You may use the DX Calculator accessory to convert degrees/minutes/seconds to decimal degrees.

Please note that locations in the Western Hemisphere use *negative* numbers for longitude. This includes the US and Canada. Most road maps do not show the negative sign on their coordinates. Stations in the Southern hemisphere will enter a negative number for latitude.

LOGic will proceed to fill in the proper distance and direction for each location in LOGic's prefix table.

This concludes LOGic's basic setup. We may now use LOGic. Other setup options will be discussed in other chapters.
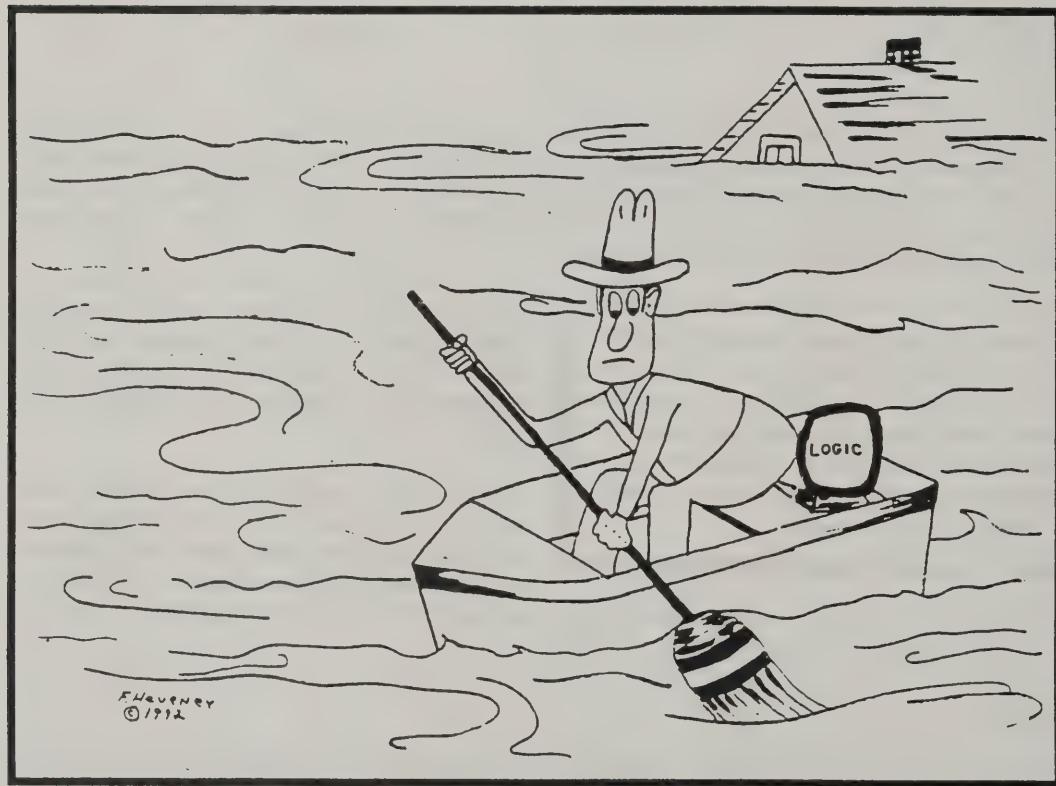
©1993 by Fillmer Hevener, Jr.

III. THE LOGGING SCREEN
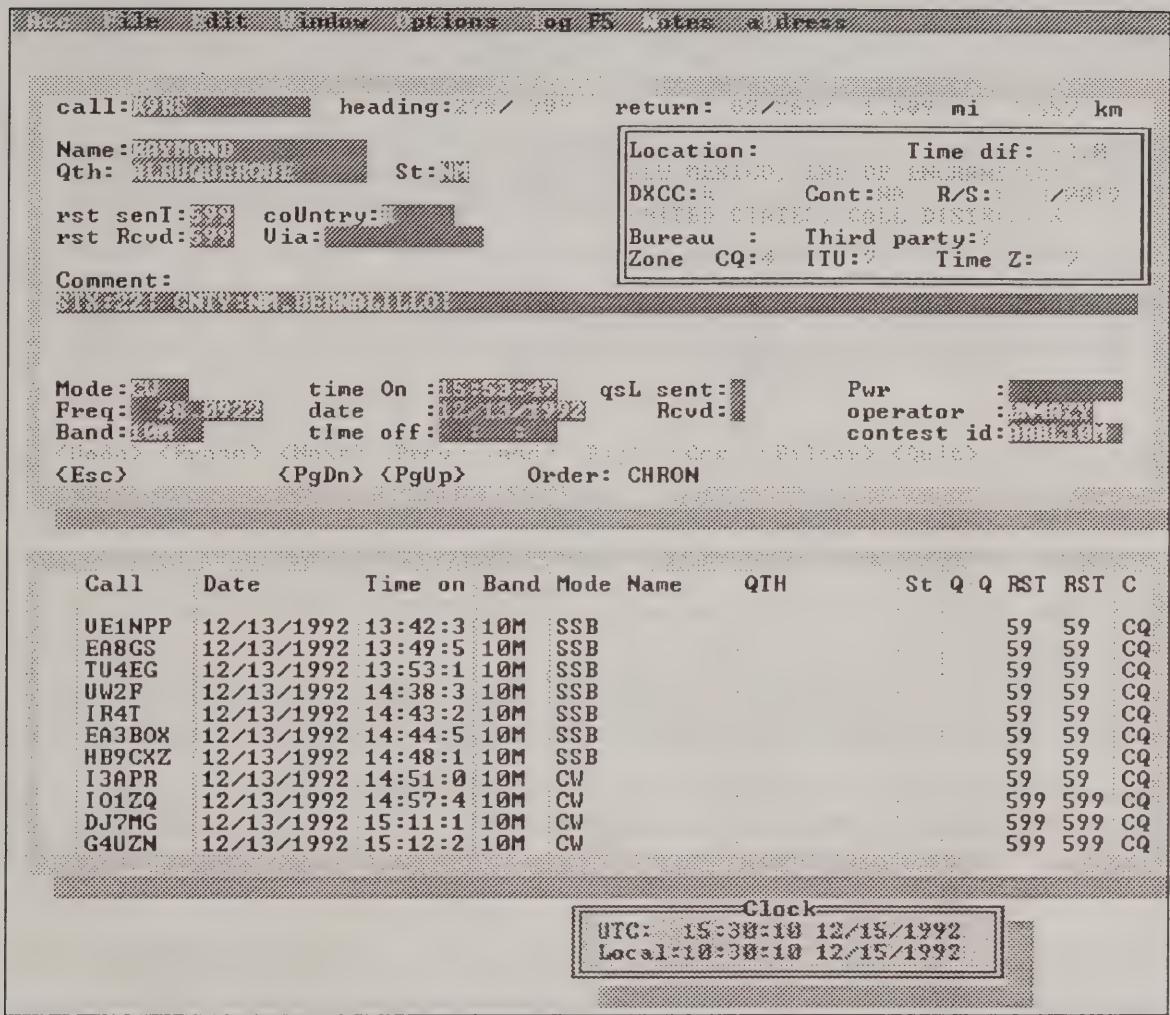
Fig 5 *The Log screen*

From the main menu, select the **Logging Screen**. This screen is the heart of LOGic. From it you will log your QSOs and access related functions. In this chapter we will learn how to do basic logging.

Personal Database Applications provides you with the most powerful yet convenient screens for accessing your data. Each screen has two windows--a **Browse** window and a **Data** window. The **Browse** window shows several records simultaneously, but only a few fields of each record at a time. It is a great tool for visually scanning your data. The **Data** window shows one record at a time, but displays all fields of the record. It is also used to change your data or enter new records in your file. Note that these windows are coordinated. When you select a different record while in one window, the other window is automatically updated to show the new record.

Note that the data window in Fig 5 is titled **Default**. LOGic's data window may be customized to your liking and operating habits. You may design any number of different screen configuration files

and select them at will. The title of the data window is the name of the currently-loaded configuration. See page 41 for more info.

Windows may be moved to make the screen most pleasing to you. The Browse window may also be resized. You may make it bigger to display more information, or smaller so that it doesn't overlap the Data window. The Browse window will pan sideways to show additional fields. You may also make other significant changes to the Browse window such as changing the position and size of the columns. See Browse Window Customization, page 42.

You may switch between the Browse and Data windows by merely clicking on the desired window with the mouse. However, using the keyboard is easier for most users. When the Browse window is foremost, typing C (for Change) will bring the Data window forward. If the data window is foremost, {Enter} will bring the Browse window forward.

When the logging screen is running, a new menu pad **log** appears. This is used to access various features related to the logging screen. We will be making use of some of them as we go through this chapter. You may press {F5} for easy access.

3.1. Actions

The screens do more than just let you page through your data. You may perform a number of **actions** such as changing a record, adding a new record, erasing a record, and searching your data.

To use the mouse to select actions, click the appropriate buttons with at the bottom od the data window.

All actions may be performed with the keyboard. When the Browse window is foremost, simply type the first letter of the desired action. They are listed on the top border of the Browse window.

When the data window is foremost, type {CTRL} and the capital letter in the button. For example, {CTRL+A}. Exceptions are <Undo>, which uses the {Esc} key, **<Next>** which uses {PgDn}, and **<Prev>** which uses {PgUp}. Keyboard users may find it convenient to press {Tab} to bring the Browse window forward, then press the appropriate key.

In the Data window, you may move from field to field with {Tab}, {↑}, and {↓}, or click on the desired field with the mouse. You may also quickly jump to nearly any field by using LOGic's ExpressKey^{im} feature. Press {F7}, then the key that corresponds to the capital letter in the field's label. For instance, {F7}C jumps to the Comment field. Note that not all fields have a capital letter in the field name. You cannot jump to these with the EspressKey feature. ExpressKey to a nearby field, then use {Enter} or {UpArrow} to move to the desired field, or select it with the mouse.

The {End} key will place the cursor after the last character of the field.

Here are a list of actions and some information about each one.

•*Change* Available only from the Browse window. Brings the Data window forward. Press C while the browse window is active. This action is the same as clicking on the data window with the mouse.

•*Next* Available only in the Data window. Moves to the next record in the file. Keyboard users press {PgDn}. Pressing {PgDn} while in the Browse window will advance several records so as to display a new window of data. To advance one record while in the Browse window, use the {DownArrow} key or the mouse.

•*Prev* Like Next as described above, but moves to the previous record in the file. Keyboard users press {PgUp}.

•*Add* Places a new record in the file and activates the Data window so that you may enter data. An annunciator that says "Adding" is displayed in the lower lefthand corner of the screen. Keyboard users press A while the Browse window is active, or {Ctrl+A} if the data window is active.

•*Undo* Available only in the Data window. If you make changes to the data, then decide that you do not want to save the changes, Undo will revert the screen to the state it was in when the record was first displayed in the Data window. Keyboard users press {Esc}. If you select Undo while Adding, the new record will be removed.

•*Erase* Removes a record from the file. You will be asked to confirm that you really want to erase the record. Once you Erase a record, it is gone forever. Keyboard users press E while the browse window is active, or {Ctrl+E} if the data window is active.

•*Get* Rapidly locates a specified value in your file using state-of-the-art indexing techniques. A field will be displayed for each index that is available -- CALL and DATE/TIME. If you select an index other than the one currently in use, the order in which the Browse window displays the data is changed, and the **Order** indicator at the bottom of the screen will be updated. Keyboard users press G while the browse window is active, or {Ctrl+G} if the data window is active.

•*Filter* LOGic's Filter feature provides a way to retrieve data that is based on a specified value for any field or combination of fields. You may easily perform searches that would be difficult or impossible on other products, such as finding all records between a given range of values, using DOS-style wildcard pattern matching, etc. Filter is also used to count all records in your file or only records using certain criteria. See Filtering, page 23. Keyboard users press F while the browse window is active, or {Ctrl+F} if the data window is active.

•*Dupl* Duplicates the current record. Use this if you are entering a record that is similar to an existing record, then change the new record. Be sure to change the duplicated record in some way. There is no reason why you would want two exactly identical records in your file! Keyboard users press D while the browse window is active, or {Ctrl+D} if the data window is active.

•*Quit* Exits the screen. You may also quit by clicking the close gadget in the upper lefthand corner of either the Browse or Data window. Keyboard users press Q while the browse window is active, or {Ctrl+Q} if the data window is active.

3.2. Logging a QSO

Let's enter a QSO into LOGic. Select the **Add** action (type A if the Browse window is active. If the Data window is active, click on the < **Add** > button, or type {Ctrl+A}. A blank QSO record will be placed in the database, and the cursor will move to the **call** field. Enter a call, and press {Tab}.

> *Hosenose says:* LOGic 4 customers have complete control over automatic logging of country, zones, etc., as well as data from previous QSOs.

The UTC time and date will be placed in the log, along with the country. If the station logged is in a country other than you own, the continent, ITU, and CQ zone will be placed in the **COMMENT** field in the proper format for user-defined fields (see page 27). Other information may be logged depending on which country is involved. For example, logging a Canadian station will log the province. Logging a station in the former USSR will log an oblast.

> *Hosenose says:* LOGic looks only at the country field for DXCC tracking. It does not rely on proper interpretation of the callsign, as this is not always possible. Improper information in the Prefix Box does not affect DXCC tracking.

Additionally, if you enter a station that you have previously logged, name, QTH, and state will also be cop-

ied from the previous QSO(s). LOGic will scan several previous QSOs to collect information. So, if you logged name in one previous QSO, and QTH in another, LOGic will read both previous QSOs and copy name *and* QTH!

If the prefix of the station entered is found in LOGic's Prefix table (it almost always will--LOGic has around 4000 prefixes on file!), other information is displayed in the *Prefix Info Box* in the upper righthand corner of the screen--the country name, location (province, region, etc.), CQ and ITU zones, ARRL outgoing bureau status (**Y** means they accept cards for this country), third-party traffic status (**Y** means that it's ok), time zone, and time difference from your local time. LOGic 4 also displays the UTC sunrise and sunset time for the other station.

Proceed to fill in other fields as desired.

3.3. Data fields

Some explanation is in order for some fields. You may also obtain information about a field by pressing {F1} while the cursor is in that field.

•Call Enter any portable designators as customary, except when a station signs portable with a single number. In these cases, enter the portable designator with the proper country prefix so that the computer can process it properly. For example, log N6MRQ/4 as N6MRQ/W4. If the station is signing with a designator that is does not indicate his loca-

> *Hosenose says:* The **Time Dif:** display gives the difference between your local time-what your computer clock is set to-and the *official* time of the other station. If the other station is currently using Daylight Savings Time, European Summer Time, Israeli Summer Clock, or some other deviation from their normal time, LOGic cannot take this into account. For example, a 1-hour difference will be shown when talking to a station in your time zone during Daylight Savings Time. This is normal.

tion--MM for Maritime Mobile, AM for Aeronautical Mobile, or an interim identifier for a temporary license upgrade authorization, enter this suffix preceded by a dash (-) instead of a /. For example, WN4AZY-AM. This will prevent LOGic from treating it as a true portable designator.

•State This field is for valid US states that count for WAS only. Enter MD if you work a District of Columbia station. This does not affect address printing when QSLing. Press {F2} for a menu of valid states. Entering a state will alter the beam headings and prefix display.

•Country This field is used for tracking DXCC. It is normally filled in automatically based on callsign. However, there are some cases where the country cannot be properly determined from the callsign. In these cases, simply enter the country manually. Press {F2} for a list. You may type the first letter or two of the country, then press {F2}. This will cause the country menu to pop up with the selected area of the list displayed, so that you do not have to page through a long list. In instances where location can be more accurately determined from the country than the callsign (the country designator contains a hyphen), entering a country will alter the Prefix Info Box and beam headings.

> *Hosenose says:* LOGic looks *only* at the country field when tracking DXCC. It does not rely on proper interpretation of the callsign, as this is not always possible. Therefore, if improper or no information is displayed in the Prefix Info Box, this does not affect DXCC tracking. Simply enter the proper country manually.

•Via Enter information about how a QSL card is sent. Put a manager's callsign, BURU, or whatever, here. This field interfaces to LOGic 4's QSL Route facility.

•Mode A list of valid modes is displayed at the bottom of the screen. This is the list that you entered in the General Ham Setup screen. You must enter a mode for LOGic's awards progress tracking to

work. The mode is automatically filled in from the value entered in the last QSO, or to the mode read from a computerized radio (LOGic 4 only). See Change Band/Mode in the next section.

•*Freq* Enter the frequency in Megahertz. Your entry will be checked against the band table, and you will be alerted if you are operating outside a legal amateur band. If the frequency is inside a valid amateur band, the band field will be filled in automatically. You may alter the band table to conform to your license class, add new bands, or remove bands that you do not use. See page 40.

You do not need to enter a frequency.

•*Band* You must enter a band for LOGic's awards progress tracking to work. The band field is automatically filled in with the band from the last QSO logged, or, if using LOGic 4 with a computerized radio, from the frequency on your radio. See Change Band/Mode in the next section.

> *Hosenose says:* The QSL generation process looks only at QSL Sent. The awards progress system looks only at QSL Rcvd. Be careful not to confuse the two!

•*Date and time* `Date` and `Time On` are automatically filled in for you. `Time On` is first filled in when you Add a record. This keeps the new record at the bottom of the Browse window. It is updated when you type a call and press {Tab} to indicate the time contact was established. `Time Off` is filled in when you exit the Data window or add another QSO. You may manually change these fields. A `Set time off` option is available from the `Log` menu pad for easily filling the `Time Off` field with the current time. Automatic logging of date and time may be turned off This is helpful when entering data from your old paper logbooks. See **non-real-time mode**, page 21.

•*QSL Sent* This field keeps track of cards sent. If you want to send a QSL card for this QSO, place an `R` (Requested) in the QSL Sent field. This alerts the report writer to print a card or label for this QSO (see page 54). `F` (Fulfilled) means that the card has actually been sent. The report writer will (with your permission) automatically update this field. However, if you are filling your cards out by hand for some reason, type `F` here to show that the card has been sent. **This field has no effect on awards progress tacking.**

•*QSL Rcvd* This field indicates not only whether or not you have received a QSL card for this QSO, but if you *expect* to receive a card. If you have requested a card and expect to receive it, enter an `R` (Requested) here. When you receive the card, recall the QSO and enter an `F` (Fulfilled) here.

The awards progress system uses the QSL Rcvd field to track unworked/worked/con-firmed status. It also indicates Requested status so that you can see that while an entity is not confirmed, you are expecting a card for it.

•*Pwr* If you desire, log transmitted power in watts here. This is automatically filled in with the value you entered in the General Ham Setup screen, if any. This field will accept fractional watts for QRP operation. Only the four most significant digits will be stored.

•*Operator* if the same log is used by several operators, as may be the case with a DXpedition or club station, enter the call of the operator making the QSO here. This field defaults to the call entered in the General Ham Setup screen. If you change it while logging, the new call will carry forward to subsequent QSOs.

LOGic supports multiple databases for family stations. See page 47.

3.4. Change Band/Mode

If you do not have your computerized rig interfaced to LOGic (LOGic 4 only), the band and mode are copied from the last QSO. If you change band or mode, you should let LOGic know this before

logging the next QSO. This way, the automatic DXCC progress display and LOGic 4's contest dupe check will work properly. To change the band or mode, select **Change band/mode** from the **Log** menu pad. The next QSO logged will use this band and mode.

The **Change band/mode** option does not affect the currently-displayed QSO. To change the band or mode for a QSO that has already been logged, simply type the new information in the Band and/or Mode field.

3.5. Beam Headings

Hosenose says: LOGic does not know where the station you are talking to is located! It gives the direction to a somewhat arbitrary point in the country, area, or state in which the station is located. In other words, if you work a station next door to you, LOGic displays the DX and direction to the approximate center of your state, not to your next-door neighbor. Headings to locations close to you will be inaccurate or incorrect! For accurate headings for close-in work, use the DX calculator accessory.

LOGic automatically displays beam headings. Four figures are displayed. The first two are short and long path. The second two are *return* short and long path. This allows you to tell the other station how to aim the antenna to point to you. Contrary to popular opinion, the return path is *not* 180 degrees opposite the short path.

LOGic's DX Calculator accessory (available from the **ACC** menu pad) is a great tool for all types of hamming. It accepts a **from** and **to** location in decimal degrees, degrees/minutes/seconds, grid square or callsign. It not only displays distance and direction between the two selected points, but converts units. In other words, if you enter lat/lon in degrees/minutes/seconds, decimal degrees and grid square will be calculated.

Of course the DX Calculator is handy for VHFers. It also has another novel use--you may use it to tell two other stations how to point their beams towards each other. This is great for DX nets.

3.6. Notes and Biographical info

LOGic will accept any amount of textual information with *each* QSO. This is ideal for logging third-party traffic, keeping notes during net operations, and notes about those interesting rag chews. To activate the Address window, select the **notes** menu pad. The window will remain on the screen until you close it. To close the edit window, click the close gadget with the mouse or press {Ctrl+W} while in the edit window. Pressing {Esc} will close and abandon any changes you have made since activating the Address window. To activate the Address window when another window is active, click on it with the mouse, or press {Alt+D}. Pressing {Alt+D} again will return to the window that was active previous to activating the Address window.

The Biographical Info feature is accessed through the **log** menu pad. It is simply a fast way to access the first QSO in your log with the station currently displayed on the screen. This is a handy way to keep all notes about a station in one central, easily-accessible place.

When we say the notes are stored with the first QSO, we mean the QSO with the earliest date, not necessarily the first one you entered.

Note that you may use the Cut and Paste features to move data to or from the Notes window.

3.7. Addresses

LOGic makes QSLing easy by entering an address to be printed on an address label. Select the **address** menu pad. The Address window works exactly like the Notes window discussed previously. Type in the address as you want it to appear on the label. Do not include the callsign. There is an option to print the callsign on the address label when we print the labels.

To save typing, the **copy log info to address** option of the **log** menu pad will copy name, qth, state, and country to the address window. Simply insert the address, postal code, or anything else needed.

Note that you may use the Cut and Paste features to move data to or from the Address window.

3.8. Logging Screen Tips

Here we will discuss miscellaneous pointers for making best use of the Log screen.

The time, date, and information from the Prefix table are logged when you hit {Enter} while in the Call field. You may log information in anticipation of working a station, even if you do not know the callsign, by pressing {↓} to exit the callsign field. Log the information that you hear. When you establish contact, place the cursor in the call field, type corrections to the callsign if necessary, and press {Tab}, or use the **force log** option of the log menu pad.

If you have already logged a QSO by pressing {Tab} while in the Call field, and wish to correct the callsign without changing the Time On field, use the {↓} key to exit the Call field after typing in the changes.

As discussed previously, when you work a station who is already in your log, you are notified, and items such as name and QTH are automatically logged. To *view* the previous QSOs, use the Display Previous QSOs option of the log menu pad. A window similar to the Browse window will appear with previous QSOs displayed.

To check the country name, DX, direction, etc. without logging the station, type the call in the callsign field, and select the DX/direction option of the log menu pad.

3.9. Non-Real-Time Logging

If you are entering log information in non-real-time mode, as when entering data from a paper logbook, turn off **real-time mode**. This will cause LOGic to not fill in the date and time in from the system clock. Instead, the time and date will be carried forward from one QSO to another. With LOGic 4, the interface to the radio will be ignored. To turn off real-time mode, select **real-time mode** from the **log** menu pad. To turn real-time mode back on, select the menu option again. There will be a bullet beside the option if real-time mode is on.

> **Hosenose says:** QSOs do not have to be entered into LOGic in chronological order. They will automatically be placed in the proper position based on date and time. Therefore, you may start using LOGic for your daily logging now, and still enter your old QSOs at any time.
>
> When entering your old QSOs, you may start with the most recent and work backwards. This way, you have the most recent information from your paper logs available right away!

IV. RETRIEVING YOUR DATA

The primary reason you keep your data in LOGic is that you intend to refer back to it. LOGic has several features to aid in retrieving and viewing your data. You have already seen how useful the Browse window is for viewing your data. With it you may easily page through your data. However, even if you make only a few QSOs a week, your log will soon get too big to search by this method. With LOGic's Get and Filter actions, you may easily locate any QSO in your log, no matter how big your log gets!

4.1. GETting

Most of the time you want to search your log data on Call or Date/Time. Therefore, LOGic provides a method for *instantly* retrieving a QSO by Call or Date/Time. Thanks to LOGic's state-of-the-art indexing techniques, searching by Call or Date/Time will always be instantaneous, no matter how big your log file gets!

To select the Get action, type G while the Browse window is forward, or click the <Get> button with the mouse, or type {Ctrl+G} while the Data window is active. A fiend asking you to enter the first two characters of the search value appears. Hit {Tab} for now. Move the cursor to the Call field and type a call you have previously entered in LOGic. Press {Tab}. The requested record materializes before you!

Two things have happened. Firstly, the log has been reordered so that it is now in alphabetical order by Call. Note the **Order** indicator at the bottom of the data window. Secondly, LOGic's *record pointer* is moved to the QSO that you selected. The record pointer determines which record is displayed in the Data window. Also, the record pointer causes a record in the Browse window to be highlighted.

Hosenose says: You may use the GET action for doing approximate-match searches. When Getting a Call, you may enter just the prefix or even just the first letter or two of the call. The record pointer will be moved to the first call in the alphabetized callsign list that matches your entry. If you enter a letter that has no match, LOGic will move the record pointer to the record *after* the value you specify. For example, if you Get a call of Q, and there are no calls starting with Q in the log, the record pointer will be positioned at the first call starting with R.

Likewise, if you are Getting a Date Time, and there is no QSO with the exact date time you specify, LOGic will move the record pointer to the first QSO *after* the Date Time entered.

We can search by Date/Time in a similar manner. Select the Get action, and enter the Date, and optionally the time, of the QSO you wish to locate. The log file will be reordered to chronological sequence (the **Order** indicator will now say Chron, short for *chronological*), and the QSO that most closely matches the Date/Time you entered will be highlighted in the Browse window and displayed in the Data window.

Searching by Date/Time looks only at the QSO Date and Time On fields. You cannot search Time Off using Get.

4.1.1. Automatic Get Field Selection

When you type G in the Action field, you are asked to enter the first two characters of the search value. If you hit {Tab}, as we have been doing thus far, the cursor jumps to the field for the order which is currently in effect (the Call field for Call order or Date/Time). If you type the first two characters of the value you are searching for, LOGic will attempt to select the proper field automatical-

ly. If you enter two numbers here, the cursor will jump to the Date/Time field. If you enter at least one letter, it will jump to the Call field.

4.2. Filtering

LOGic's **Filter** feature allows you to temporarily alter a file so that only certain records are displayed. Filtering is used to locate a certain record or group of records, or count records meeting certain criteria.

How is Filtering different from GETting? While both features may be used to retrieve information, they function quite differently. As we discussed in the section on GETting, the GET action locates a specified value and makes it the current record that is displayed in the Edit window. Get also allows you to select the order of the database (by Call or Chronologically). All records are still available to be viewed with the Browse window. Get uses indexes to locate the desired record instantly no matter how big the database gets. While indexes speed data retrieval, they consume disk space, slow down adding of new records, and greatly add to program complexity. Therefore, there are practical limits to the number of indexes that a file may have. The log file has indexes only for the Call and Date/Time On fields, and can only search on these fields.

Filtering, on the other hand, does not rely on indexes. Therefore, you are not limited to using only indexed fields. You can filter the file based on specified values for *any* field or combination of fields! For instance, you may use filtering to view all QSOs with CA on 10 meters FM with someone named Bob or Robert.

Since Filtering does not rely on indexes, it is relatively slow compared to Getting. The entire file must be read to search for matching records. Nonetheless, most systems can search 1000 records per second!

Let's try the Filter feature. Go to the Logging screen and select the Filter action. Move the cursor to the Name field and enter the name of someone that you have previously entered in your log. Select <<Ok>> with the mouse, or press {ENTER} twice. Every QSO with the name you specified will be displayed in the Browse window (you may have to scroll up and down to see them all). LOGic will also display a count of the number of matching records found.

Filtering makes the file *appear* to contain only the records that match the criteria that you specify. However, the other names are not gone. They are simply being hidden from view. We know that this is happening because a *Filter* expression is displayed at the top of the screen. The Filter expression describes in terms that the computer can understand which records should be displayed. In our example, the filter may say **NAME='BOB'**.

Understanding the intricacies of the Filter expression is not necessary for casual use. All that is important is to understand that if a Filter expression is displayed at the top of the screen, not all records are available to the screen. To make all records available, select the Filter action, then select Clear.

By following a few simple rules you may easily do even complex searches.

To display records with a specified value, simply enter the value in the appropriate field. For instance, entering JIM in the NAME field will display all records with JIM in the NAME field.

You may enter values to match in several fields. For instance, entering ROB in the NAME field, and CA in the STATE field will display everyone named ROB who lives in CA.

With fields that contain character or alphanumeric data, you may enter only the first part of a value in the field, and only the number of characters entered will be matched. For instance, ROB will display ROB, ROBERT, ROBBIE, ROBERTO, and ROBERTA. Entering R will find everyone whose

name starts with the letter R! You may disable this feature by putting an underscore (_) after the value. For instance, ROB_ will locate only ROB, not ROBERT, ROBERTO, ROBERTA, etc.

You may search for more than one value in a field. Simply enter the values separated with the ~ character. The ~ means OR. For example, ROB~TOM will display all records that have either ROB or TOM in the name field. Note that this example would also find ROBBIE, TOMMY, etc. because of the partial-match feature. However, ROB_~TOM will find ROB, and not ROBERT. It will, however, find TOMMY. ROB_~TOM_ will find only ROB and TOM.

Let's practice by making a filter to view all QSOs with CA on 10 meters FM with someone named Bob or Robert. Select **Filter**. Enter CA in the STATE field. Enter 10M in the BAND field. Enter BOB~ROBERT in the Name field. Click <OK> or press {Enter}. That's all there is to it! This would also find names of BOBBY or ROBERTA. If this is unacceptable, enter BOB_~ROBERT_ in the Name field.

Symbol	Description
&	between
#	not
*	pattern match
~	or
>	greater than
<	less than
=	equal
<=	less than or equal to
>=	greater than or equal to
_	(underscore) space
$	contained in

Fig 6 Special filter symbols

You can display record that contain a specified value *anywhere* in the field. This is especially useful with the Comment, Notes, and Address fields. Simply put a $ before the value to be searched for. $ means "contained in". For instance, putting $YAGI in the COMMENT field will look for records with YAGI anywhere in the comment field. If you simply entered YAGI, the comment would have to have YAGI as the first four characters for it to be found. The $ operator may be used with ~. $YAGI~$QUAD will display records with either YAGI or QUAD contained anywhere in the field. The $ feature works only with Character and Memo fields. It may not be used with dates or numeric-only fields (frequency).

The **between** feature allows you to display a range of values. & means between. To display all QSOs made on the 80-meter US CW Extra subband, enter **3.5&3.525**. It will display all QSOs with a frequency between 3.5 and 3.515, inclusive. In other words, it will display all QSOs made on 3.5, 3.525, and anything in between. & may be used for date and character fields as well as numeric. Entering ANN&BOB will find ANN, BOB, and all names that fall alphabetically between ANN and BOB. Examples include ANNIE, ARDRA, BARBARA and BOAZ, but not ANA or BORIS. If numbers and letters are mixed, the numbers come before letters. Zero comes before 1, not after 9. & may be combined with ~ (or). For example, 3.5&3.525~3.9 will display everything between 3.5 and 3.525 inclusive, as well as 3.9.

means **NOT**. To find everyone who is **not** named ROB, enter **#ROB** in the name field. Think of # as excluding records. Since LOGic matches only the characters entered, ROBBIE, ROBERTA, etc. will also be excluded. To exclude only ROB, enter **#ROB_**. NOT may be combined with all other features. **#$YAGI** excludes all records with YAGI anywhere in the field. **#3.5~3.525** excludes records whose Frequency is between 3.5 and 3.525, inclusive. When using the OR (~) feature with NOT (#), put the # as the first character, and use it only once. For instance, to exclude everyone except BOB or ROBERT, enter **#BOB~ROBERT**. Do not enter **#BOB~#ROBERT**.

Wildcard pattern matching that works similar to the wildcard filename matching of DOS may be performed on Character and Memo fields. Use a * as the first character of the field to tell LOGic to pattern match the field. Then type the wildcard pattern. A ? matches any single character. A * matches any character or group of characters, or no character. For example, *ANN? will match ANN

followed by any single character, such as ANNA or ANNE. **NOTE THAT THE FIRST * IS NOT PART OF THE PATTERN. IT SIMPLY TELLS LOGIC TO DO PATTERN MATCHING ON THIS FIELD. **ANN?** will match ANNA, ANNE, LOUANNE, or LOUANNA. **?ANN?** will match LOUANNA or LOUANNE, but not ANNA OR ANNE, since the first ? says that some character must precede ANN. Wildcard patterns may be combined with # (not). **#*ANN?** will exclude ANNA or ANNE.

You can search for values that are greater or less than a specified value. > means GREATER THAN. < means LESS THAN. Entering **>28.5** in the FREQ field will find all QSOs whose frequency is greater than 28.5 QSOs made on 28.5, however, would not be found. To find all QSOs made on 28.5 or higher, we can use **>=**, which means GREATER THAN OR EQUAL TO. **<=** means LESS THAN OR EQUAL TO.

These features are very useful with dates. Later dates are GREATER THAN earlier dates. **>=12/5/93** will find all QSOs made on or after December 5, 1993, assuming you are using AMERICAN date format.

While <, >, <=, and >= are especially useful for numbers and dates, they may also be used on characters. **>=ANNE** will locate ANNE and all values that come alphabetically after ANNE.

Wildcard matching cannot be combined with $ (contained in). To look for a pattern anywhere in a field, put a * before and after the value to search for. **`**ANN?*`** will look for ANN followed by any single character anywhere in the field.

Please note that wildcard matching may only be done with Character or Memo fields. The type of the field is displayed on your screen.

4.2.1. Miscellaneous Filtering Notes

If your search values are too long to fit in the field, continue to type. The field will scroll sideways.

The Count option merely counts the number of matching records. It is much faster than actually Filtering. Any active filter is cleared. To count ALL records in the file, enter ** in any character field.

Your input is not checked for errors. For instance, if you enter letters in a numeric field, they will be ignored or converted to 0. Also beware of filters that are syntactically correct, but achieve nothing useful. For instance, entering **>3.5~<3.525** is syntactically correct, but will retrieve all records, since all numbers are either greater than 3.5 or less than 3.525.

Enter dates in the same format that you have selected in your Setup. In other words, if you have selected American, enter the month first. If you have selected a European format, enter the day first. You may use any separator. Leading zeros for single-digit months or days are not necessary. You do not need to enter the century. If you do not enter a century, the current one will be used. To match blank dates, simply enter a space, a separator, another space, and another separator: / /

If you enter an invalid date, it will be converted to a blank date when you exit the Make Filter window. You will be warned if a blank date is entered or results from a date error.

LOGic uses quotation marks ("), apostrophe ('), and square brackets ([and]) internally when filtering Character and Memo fields. You may search for values containing quotation marks, apostrophe, or square brackets, so long as you do not use all three marks in the same search value. **[BIG "RIG"]** and **"JOE'S PIZZA"** is valid. **"JOE'S [BIG RIG"** will cause a program error.

Case is ignored when filtering Notes and Addresses. Entering **$BOB** for Notes or Addresses will find any record containing BOB, Bob, bob, bOb, etc.

All actions are available while a filter is in effect. You may change your data, Add new data, Erase records, etc.

Get is handy when there are many records which match the filter. Suppose you set a filter to display all 10-Meter QSOs, and thousands of records are found. You may use Get as always to locate a specific record. It will function as always, except that QSOs not matching the filter (in this case, non-10M QSOs), will be ignored. The order may not be changed while a filter is in effect. The order that was in use before filtering will be used. If a filter is in effect, you must cancel the filter, then Get, to change the order.

If you add records while a filter is in effect, the new record will be displayed even if it does not match the filter. Likewise, if you change a found record so that it no longer matches the filter, it will continue to be available. It will not disappear.

While LOGic's Filter Maker is very powerful, there are some searches that it cannot do. For instance, it cannot locate all QSOs with a NAME of BOB **or** a QTH of BOSTON. Entering BOB for NAME and BOSTON for QTH will locate all QSOs with a NAME of BOB **and** a QTH of BOSTON, or to say it in English, all BOBs living in BOSTON. If you wanted to locate everyone named BOB, regardless of where they live, as well as everyone living in BOSTON, regardless of their name, you will have to use LOGic 4's Filter Editing feature. Entering a filter is done just like entering a select criteria for a report. See page 49.

"Tech Support? I lost it by an act of God. Honest..."
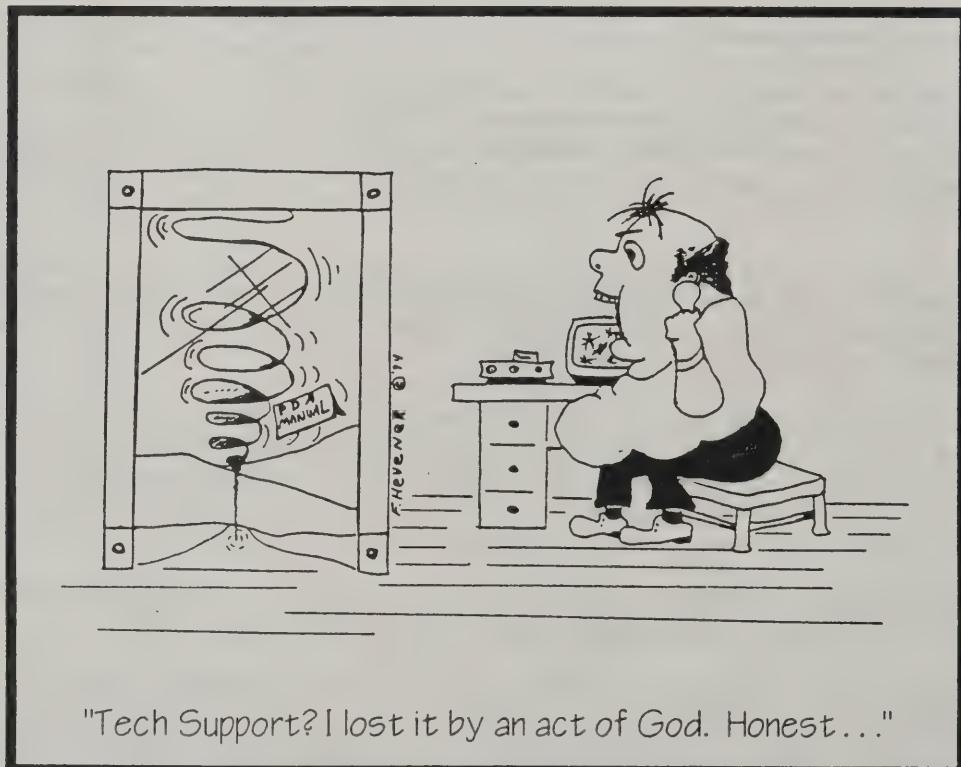
V. USER-DEFINED FIELDS

```
┌─────────────────────────────────────┐
│  WX:COLD & RAINY|                    │
│  AGE:25|                             │
│  OCCUPATION:AUTO MECHANIC|           │
│  TEMP:58|                            │
│  1010#:28456|                        │
│  CNTY:LOS ANGELES|                   │
│  QSLMSG:THE NEW RIG SOUNDS GREAT!|   │
│                                      │
└─────────────────────────────────────┘
```

Fig 7 Examples of tagged fields

One of LOGic's most powerful features is its user-defined field capability. User-defined fields allow you to log information, such as age, occupation, rig, antenna, power, DXCC, county, or 10-10 number, for which there are no dedicated fields. These may be searched or reported just like normal fields. User-defined fields are an integral part of LOGic's awards tracking and copy from previous QSO features. We will discuss user-defined fields further in these chapters.

Rather than merely giving you a few undefined fields, LOGic implements the user-defined field feature using *Tagged Fields*. This method is highly advantageous. It allows us to have as many different user-defined fields as we want without having to reserve a huge amount of record space for user-defined fields.

User-defined fields are stored in the Comment field, preceded by a short, descriptive tag, and followed by a special terminator character | ({Shift+\} on most keyboards). You may have as many user-defined fields in the Comment field as will fit. Tagged fields may be placed anywhere in the Comment field, and may be mixed with regular comments. For example (the tagged fields are printed in bold here for clarity. They will not be bolded on your computer screen):

TRAVELS BY HERE A LOT. **1010#:23594|** ALSO USES LOGIC. **AGE:34|**

While it is a simple matter to enter user-defined fields in the comment field by simply typing the tag, value, and terminator, LOGic has facilities to make accessing a tagged field as simple as accessing a regular field.

> *Hosenose says:* up to five user-defined fields may appear on the log screen just like regular fields. See *Screen Configuration*, page 41.

LOGic comes set up with several user-defined fields. For easy entry, change, or deletion of tagged fields, Select **Tagged Fields** from the log menu pad. You will be presented with a menu of tags. Select the desired tag with the mouse, or by moving the highlighted bar with the arrow keys and pressing {Enter}, or by typing the first few letters of the tag and pressing {Enter}. For practice, select **CQZ:** which is the tag for the CQ ZONE field. If a CQ Zone is already logged, it will be placed in the field for you to edit or delete. If the tagged field is associated with awards tracking, your input will be checked to make sure it is valid. For an example, try entering a CQ Zone of 50. You will be notified that 50 is an invalid value, and a list of valid values will appear. You may scroll through the list, since in most cases there will be too many values to display them all in the window at once. You may press {F2} for a menu of valid values. If you enter a value or partial value before pressing {F2}, the menu will start with the specified value. For example, select the user-defined field **CNTY:**, enter **GA,F** then press {F2}. Georgia counties starting with F will be displayed.

5.1. Creating your Own Tagged Fields

In this section we will learn how to create our own tagged fields. We will discuss only tagged fields *not* related to awards tracking. Tagged fields are an integral part of awards tracking, and will be discussed again in the Awards Tracking chapter.

LOGic comes set up with several tagged fields. Here is a list of the more important ones:

Field	Tag
Comment for QSL card	QSLMSG:
1010 Number	1010#:
ARRL Section	ARRL SECT:
Continent	CONT:
CQ Zone	CQZ:
ITU Zone	ITUZ:
Russian Oblast	OBL:
RX Power	PWR:
U.S. Counties	CNTY:
WPX Prefix	PFX:
Grid squares	GRID:
Islands of the Air	IOTA:
Transmitted Serial#	STX:
Received Serial#	SRX:
SWL QSLing (see below)	SWL:

We suggest that you use these where applicable, and do not change them, as many of them are tied to other LOGic features such as QSL management and LOGic 4's contest mode.

To add your own tagged field, select a unique, descriptive tag. Choose something that is short, descriptive, easy to remember, and not likely to occur in a normal comment. The tag must end with a colon. Make sure that the tag you choose does not contain another tag. For example, a tag of **G CNTY:** is not acceptable because the computer cannot differentiate it from **CNTY:** Use **CNTY G:** instead.

Enter your new tags in the General Ham Setup, in the first field of the User-defined fields window. Some tags are already entered. Enter your tag at the end of the list. Also, note that there are already many tags defined for use in awards tracking. Check to make sure that the tag you intend to use is not already in use before entering it. Make sure that a comma, and only a comma, separates each entry.

5.2. Filtering and User-defined Fields

You may easily search user-defined fields with the Filter action. Select the **Filter** action, and move the cursor to the Comment field, and type $ followed by the tag and all or part of the tagged value you wish to locate. For example, **$CNTY:IL** will find all QSOs with a county in Illinois. **$CNTY,WILL** will find **Will** and **Williamson** counties. To search specifically for **Will** county, include the terminator. Enter **$CNTY:WILL!**. To search for all QSOs with any county logged, enter $CNTY: Remember, $ means **look for the following value anywhere in the field.**

5.3. Markers

Often it is desirable to mark a QSO to indicate that it is of a certain type. Suppose that you frequently log into the Podunk Emergency Net. You wish to be able to report or find all QSOs made while checked into the net. Simply enter a unique tag with no following value or terminator anywhere in the Comment field. Enter **PEN:** in the Comment field of each Podunk Emergency Net QSO made. Or to mark a QSO as being with a YL operator, enter **YL:**. You may then easily find or report these QSOs by looking for PEN: in the Comment field.

Markers are also used by the awards progress report to track cards that have been submitted for DXCC or other awards credit. See page 55.

5.4. QSL Card Messages and SWL QSLing

You may enter a short personal message to be printed on QSL cards and labels by entering a tagged field with a tag of **QSLMSG:** and a terminator of |. For instance:

```
QSLMSG:TNX FOR THE QSO LEVI.  ENJOY YOUR NEW LOGIC|
```

You may enter up to 52 characters for labels and 90 characters for cards.

To confirm a reception report from a short wave listener, enter a "QSO" with the SWL's "callsign" in the call field, and other appropriate info such as mode, frequency, and date. Be sure to remove country, state, zones, etc., as SWL reports do not count towards amateur awards. Place the callsign of the station you were in QSO with when the SWL heard you with a tag of **SWL:** For instance:
```
SWL:N6MRQ|
```

The format of the QSL card or label will automatically change to accommodate an SWL confirmation.

user-friendly software

VI. AWARDS PROGRESS TRACKING

LOGic's unsurpassed awards tracking facility will automatically track *any* award. As you have been entering QSOs in your log, LOGic has been keeping track of several awards for you. You may rapidly check your status from the Log Screen, or get a printout ready to submit with your cards for your certificate.

6.1. Online Awards Check

Let's try LOGic's online awards progress check. We will use DXCC for our example. However, all other awards are checked in exactly the same manner. While in the Log screen, select **Awards Progress Check** from the log menu pad. A menu of awards that LOGic is set up to track appears. Select DXCC. A window will appear asking you to enter the country to check. If a

```
============ Progress for DXCC:UE:   CANADA ============
                SSB   CW   AM   FM   RTTY  PKT  SSTV  FAX   TOR
            F
   160M      .     .    .    .    .     .    .     .    .
    80M      .     .    .    .    .     .    .     .    .
    40M      .     w    .    .    .     .    .     .    .
    30M      .     .    .    .    .     .    .     .    .
    20M      w     .    .    .    .     .    .     .    .
    17M      F     .    .    .    .     .    .     .    .
    15M      w     w    .    .    .     .    .     .    .
    12M      .     .    .    .    .     .    .     .    .
    10M      w     w    .    .    .     .    .     .    .
     6M      .     .    .    .    .     .    .     .    .
     2M      .     .    .    .    .     .    .     .    .
  1.25M      .     .    .    .    .     .    .     .    .
   70CM      .     .    .    .    .     .    .     .    .
   33CM      .     .    .    .    .     .    .     .    .
        F = QSL Fulfilled (Confirmed)    R = QSL Requested
        w = worked no QSL status       . = not worked.
================= Hit any key to continue... =================
```

Fig 8 Awards progress check

country is logged for the current QSO, it will be placed in the window for you. Press {F2} for a list of countries. When the country you wish to check is displayed in the field, press {Enter}. A chart showing your progress for each band/mode combination, as well as mixed band, mixed mode, and mixed/mixed appears. For each combination, you may see whether the status is confirmed (F (fulfilled) in QSL Rcvd field), QSL Requested (R in QSL Rcvd field), unconfirmed (a station for this country has been logged, but the QSL Rcvd field is blank), or unworked.

You may get a *summary* of countries worked by following the procedure in the preceding paragraph, except do not enter a country. If a country is entered for you, press {Del} to remove it. Press {Enter}. Another window appears. Here you may request a specific band and/or mode, and choose to view any of the five categories shown in Fig 9. For some awards, the Unworked and Show Deleted Entities options are not available. LOGic will scan your progress data and display the status for each

```
=========== Progress Summary for DXCC: ===========

  Band, or blank for mixed:  ▓▓▓▓▓▓

  Mode, or blank for mixed:  ▓▓▓▓▓▓

  Select progress categories to display:

  QSL Request Fulfilled (confirmed):  X
              QSL Request pending:  X
       Worked, no QSL requested:  X
                      Unworked:  X
          Show DELeted entities:  X
```

Fig 9 Requesting a summary

country followed by a summary in a display-only edit window. The cursor will be positioned at the bottom of the display. Scroll up to see the rest. Press {Esc} to exit.

6.2. The Awards Table

Thus far in this chapter we have learned how to use LOGic's awards tracking facility for checking progress for awards which LOGic is already set up to track. We will now learn how to add your own awards. To do this, we must understand how the Awards table works.

Let's take a look at the Awards table. From the Main menu, select **Ham Setup**, then select **Awards Table Screen**. This screen is operated in the same manner as the Log screen. However, it does not access your QSO data. Instead, it accesses a the Awards table. Use this screen to add your own awards

```
DXCC:ZD9 |    TRISTAN DA CUNHA        .
DXCC:ZP  |    CAYMAN ISLANDS          w
DXCC:ZX1-N|   N COOK IS               .
DXCC:ZX1-S|   S COOK IS               .
DXCC:ZX2  |   NIUE                    .
DXCC:ZX3  |   TOKELAU IS              .
DXCC:ZL   |   NEW ZEALAND             w
DXCC:ZL7  |   CHATHAM IS              .
DXCC:ZL8  |   KERMADEC                .
DXCC:ZL9  |   AUCKLAND & CAMPBELL     .
DXCC:ZP   |   PARAGUAY                .
DXCC:ZS   |   SOUTH AFRICA            w
DXCC:ZS1  |   PENGUIN ISLANDS         .
DXCC:ZS8  |   PRINCE EDWARD & MARION  .
DXCC:ZS9  |   WALVIS BAY              .

F = Fulfilled. R = QSL Requested. w = worked. . = unworked.

                                              DELeted   Total

  Total DXCC: . . . . . . . . . . . .    327

  Worked: . . . . . . . . . . . .         71        1      72
  Confirmed (QSL request fulfilled): . .   3        0       3

  Worked, QSL request pending: . . . . .   0        0       0
  Worked, no QSL requested: . . . . . .   68        1      69
  Total Worked, Unconfirmed: . . . . . .  68        1      69

  Unworked: . . . . . . . . . . . .      256

  Total unconfirmed (incl. unworked): . . 324
```

Fig 10 *Progress summary*

or to keep LOGic's DXCC list or other awards up-to-date.

The Awards table is merely a list of all awards entities that you wish to track. In it is a list of all states, all DXCC countries, all US counties, all CQ zones, all ITU zones, and many other entities.

LOGic uses this table for many purposes. Every time you enter a country, state, or other awards entity in a tagged field, LOGic checks your entry against the Awards table to make sure your entry is valid. When you press {F2} to get a list of valid countries, zones, or other awards entities, LOGic displays the appropriate part of the Awards table in the window. The Awards table also contains fields that contain your progress for each band and mode for each entity (you cannot see these fields in the Awards table screen. They must be viewed with online awards progress check as we did at the beginning of this chapter). LOGic 4 also uses the awards table for its contest exchange validation, multiplier check and scoring.

As you can see, LOGic's Awards table is a powerful feature that affects the operation of many aspects of the program. Therefore, it is a simple matter to add a new award to LOGic by simply entering the entities we wish to track in the Awards table.

Let's discuss the format of the awards table entries. First, let's view some existing Awards table entries. Select the **Get** action, and type DXCC: in the field. Press {Enter}. The beginning of the DXCC table will be displayed. GETting WAS: will display the state entries. Getting CQZ: will display CQ Zone entries.

Note the format of each entry. In the comment field, we first have a tag, followed by the entity, the terminator character (|), and finally an optional description. With the exception of DXCC: and WAS:, the tags entered in the Awards table appear on the Tagged Field menu of the log screen.

Numeric values must be 8 digits long padded with leading zeros. For example, CQZ:00000001 |

For an example, lets set up LOGic to track progress towards worked all Mexican States. First, choose a unique tag that will make our tagged field on the Log screen. MEXST: will work nicely. Enter the Tag, Mexican State abbreviation, and the terminator in the comment field. For instance, MEXST:VER |. We may use the space after the terminator for comments that will appear when we hit {F2}. In this case we would want to enter the full name of the Mexican state:

```
MEXST:VER |    VERACRUZ
```

```
MEXST:BC|     BAJA CALIFORNIA NORTE
MEXST:SON|    SONORA
              ...etc.
```

For aesthetic purposes, use the proper number of spaces after the terminator so that the descriptions line up.

Now, LOGic will track progress for working Mexican States!

6.3. Deleted Entities

LOGic supports tracking of deleted DXCC countries and other deleted entities. Simply enter DEL: in the Comment field after the description. For example:

```
DXCC:1M|      MINERVA REEF     DEL:
```

Deleted entities count towards your total confirmed, but do not show as unworked.

6.4. Non-Edited Awards Tracking

So far we have seen how LOGic can track progress towards any award where a predefined set of entities exist--states, countries, counties, CQ zones, etc. To track awards using what we have discussed thus far, someone must enter all possible entities on the awards table. Obviously, this approach is not practical for tracking awards such as grid squares or prefixes, where no definite set of entities exist, or would be extremely large. We would not want to enter all possible grid squares or prefixes!

LOGic's *Non-Edited* awards tracking handles these situations nicely. Normally, LOGic checks any award value you enter to make sure it is valid before accepting it into your log. With Non-Edited tracking, LOGic bypasses this step, and adds the value to the Awards table if it is not already there.

Hosenose says: Use the Non-Edited award tracking feature for tracking numbers assigned by 1010 International, the Old Miss net, YLISSB, and other organisations. You can quickly see if you have worked a station by number, check the QSL status, and get a quick total of how many you have worked.

To add a Non-Edited award, go to the General Ham Setup screen, and enter a tag in the second field of the User-defined fields window. Separate all entries with a comma, and make sure there are no spaces between entries.

LOGic operation with respect to Non-Edited awards tracking works the same as with other awards, except that you will be notified when an entry is automatically added to the awards table, and the summary will not show unworked entities. Deleted entity support is not available for non-edited tags.

The Non-Edited awards tracking feature is also handy for situations where you *could* enter all entities in the Awards table, but would rather not spend the time. The Islands of the Air award is an example. Due to copyright restrictions, LOGic does not come from the factory with an IOTA list. You could enter the many hundreds of islands in the Awards table, but it would be a time-consuming task. Instead, simply include IOTA: in the Non-Edited tag list.

6.5. Update Awards Progress Info

LOGic normally maintains the internal progress tally automatically. However, there are cases where LOGic's awards progress info may become inaccurate:

•When you import data

•When you change the list of valid modes in the General Ham Setup screen.

•When you add or delete bands from the Band table (see page 40).

•When you operate with Automatic Awards Progress Update off (see page 33, 41).

•When you erase a QSO from the log

•When you change a QSL Rcvd to a less-desirable status--i.e. F to R.

To get the progress reports back into sync with your log data, select the Update Awards Progress Info option of the Ham Setup menu. This option clears LOGic's internal progress tally, reads your entire log and regenerates all awards progress info.

You may optionally specify a starting date. If you do, LOGic will not clear existing tallies, but will tally any log data with a QSO Date on or after the date you specify. This is useful if you are operating with Auto Awards Progress Update turned off, or have imported data. Execution will be faster, since LOGic does not scan your whole log.

While regenerating the progress info, this option checks for errors such as missing or invalid bands or modes and values that are not on the Awards table. This information will be displayed in a scrollable edit window after the update is complete. You may print this info by using the Copy option of the Edit menu pad, and the Print Clipboard option of the File menu pad, and use it to correct your log. Press {Esc} to exit.

> *Hosenose says:* When you delete a QSO, LOGic does not does not automatically decrement your awards progress. For example, if you accidentally log 1S1RR, LOGic will of course show that you have worked Spratley Island. If you Erase this QSO, LOGic will still show that you have worked 1S. It cannot merely delete your 1S worked status without checking the entire log to make sure that there is no *other* QSO in the log for Spratley Island on the same band and mode. Since this is a relatively long process, LOGic does not do this while you are logging.
>
> Likewise, if you change a QSL Rcvd field to a less-desirable status, for example from Fulfilled to Requested , LOGic will not automatically adjust your progress status.
>
> To handle situations like these, simply run the Update Awards Progress Info with a blank date. It will typically process several thousand QSOs per minute, so you should not have a long wait.
>
> Even if you haven't knowingly deleted a QSO or changed a QSL Rcvd that would affect your progress status, it is a good idea to do an Update Awards Progress Info periodically.

6.6. Tracking Submitted Cards

LOGic will keep track of which QSOs have been submitted for DXCC and any other award. Simply mark each QSO that you submitted a card for by putting a unique identifier anywhere in the Comment field. For instance, DXCCSUB: will mark cards submitted for DXCC, and WASSUB: for cards submitted for WAS. LOGic's report writer will include these QSOs and mark them as submitted when printing a progress report. Of course you may also display them on line with the Filter action.

6.7. Automatic DXCC status display

When entering a callsign, LOGic automatically displays your DXCC status for that country. For example, this display could appear when working the Philippines on 20-meter SSB:

    DU: Fulfilled   20M:Requested   SSB:Fulfilled   20M SSB:

Here is an explanation of the display: Four categories are displayed. The first is status for the country, on any band or mode. Second is the status for the current band, any mode. Third is the status for the current mode, and band. Fourth is the status for the current band *and* mode. For each of the four categories, the best status from the QSL RCVD field is displayed. F means fulfilled (you have the card in hand). R means you have requested, but not received a card. W means that you have worked the station, but have not requested a card. Blank means that you have not worked the station.

In this example, we have DU confirmed (QSL request fulfilled) on some band and mode. We have requested but not received a card for a 20M QSO with the Philippines. We have a card for an SSB QSO with the Philippines. However, we have never worked D on 20M SSB.

For a table showing the status of each band and mode, use the online check feature described at the beginning of this chapter.

The automatic DXCC progress display may be turned off. Select Screen Configuration from the main menu.

6.8. Miscellaneous notes

LOGic's report writer will print progress reports for any award. It can even track progress for an award that is not entered in the Awards table nor as a Non-Edited tag. See page 55.

Here is a special important note about DXCC: entries: Since it is not always possible to determine the DXCC country from the callsign, LOGic will use the Country field of the Log screen, instead of the Call field, for determining prefix-related info. A dash (-) in the country field alerts LOGic to do this. Therefore, when adding a new country that cannot be determined by the callsign, be sure to include a - somewhere in the prefix. For example, PY0-T for Trinidade & Martin.

LOGic looks only at the country field when tracking DXCC progress. It does not look at the callsign field. If you enter a call, and LOGic logs the wrong country or reports that the prefix is not on the awards table, enter the country manually. Press {F2} while in the country field for a list of valid countries.

LOGic comes set up for many awards. You may delete the Awards Table entries for awards that you are not interested in. **However, do not delete WAS: or DXCC:.** In addition to WAS: and DXCC:. the awards table must contain entries for at least one other award.

We recommend that you do not delete CQ or ITU zones, ARRL sections, or Continents, even if you are not interested in tracking progress for these awards. These entries are used by LOGic 4's contesting system.

While you may maintain the awards table yourself, a subscription to quarterly updates to the awards and prefix table, as well as program updates is available from PDA at a modest cost.

VII. QSL MANAGER LIST

LOGic 3 includes a handy QSL route list that is accessible from the Log screen. It is perfect for recording QSL routes that you gather from on-the-air operation for future use. It is also used to access the optional PDA QSL Route List, which contains about 30,000 routes and is updated monthly. This inexpensive list is available single-issue or by subscription from PDA. It will greatly ease your DX QSLing chores, and increase your rate of QSL return. It can easily pay for itself in postage savings. Contact PDA for details.

Select the **QSL Manager List** from the Log menu pad. This brings up the QSL Manager screen. It works like all other LOGic data screens. You may add and modify data, search with Get and Filter, etc. This screen has four fields. Call is the callsign of the station the route information is for. QSL Info includes the callsign of the QSL manager, and/or the address of the station or the manager. Info Date is the date that you collected the information or the date that the information was last known to be correct. Source is where the information was gathered from. This is very important for judging the value of the data. Indicate here if you heard the data directly from the DX station, from packet, or the issue and name of the publication where you found the information.

When selecting the QSL Manager List option from the Log menu pad, LOGic automatically searches the QSL route file for the call displayed on the Log screen. If it is not found, LOGic will display a message and beep.

When Adding a record, LOGic checks to see if there is already a route on file for that station. If there is, LOGic will retrieve that record, and switch to Change mode. You do not need to check to see if a route is on file before adding it.

A QSL menu pad appears when the QSL screen is active. It includes options to copy info from the QSL screen to the Address or Via field of the Log screen. The Add from Log option creates a new QSL route record from the data in the Log screen. The Defaults option is handy for adding a lot of information. It sets the defaults that are automatically entered in the Info Date and Source fields. If a route is already on file when you Add a record, and something is already in the Source field, the old source will be moved to the right, and your default source will be inserted.

If a callbook database is installed, it can be accessed from the QSL menu pad.

LOGic's QSL screen features automatic cross-referencing. It takes the first space-delimited word of the QSL Info field and assumes that this is a call. It takes the manager's call and again looks in the QSL file for that call. The info for this second call is automatically displayed if it is on file. For instance, if the screen says the route for 1S1RR is W4FRU, LOGic will look for W4FRU, and display his address also. When entering data in addition to a callsign in the QSL Info field, remember how the cross-reference feature works. If entering an address that includes a callsign, place the callsign *first*. Do not put a comma after the callsign. The GOTO XREF option of the QSL menu pad will bring the cross-reference entry onto the main screen, where it can easily be transferred to the VIA or ADDRESS field of your log.

When entering an address, separate the lines of an address with |. This will cause a carriage return to be inserted when copying to the Address field. If you put comments after the address, separate the comment with \. Anything after the backslash will not be copied to the address window. For example:

N4NE FRANK SCHIBE|PO BOX 88|DULUTH, GA 30136\HAS LOGS SINCE 7/91.

```
  Call: ▓▓▓▓▓▓▓

  Qsl info:
  ▓▓▓▓▓
  ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓
  ▓▓▓▓ ▓▓▓▓▓▓  ▓▓▓▓▓▓▓▓ ▓▓▓▓▓▓▓▓▓▓, ▓▓ ▓▓▓▓▓ ▓▓▓▓


  Info date: ▓▓▓▓▓▓▓▓  Source: ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓

  From: ▓▓▓▓▓         from Date: ▓▓▓▓▓▓▓▓    Maint date: ▓▓▓▓▓▓▓▓

  misc: ▓▓▓▓▓▓▓▓

         ROUTES. Change. Erase. Add. Dupl. Get. Filter. Quit
  <Esc   Call       QSL Info              Cross Ref        Source      I ▲
      ► ▓▓▓▓▓▓▓   ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓  ▓▓▓▓ ▓▓▓▓▓▓▓▓   ▓▓▓▓▓▓      ▓▓
        1S2CK     WB0TEC C.L.BAKER,BOX 507                WA2SPL @ WA  06
        1S5IJ     REPORTED AS A PIRATE                    WA2SPL @ WA  12
                  DDA UENI KONG  DOD 200  ▼               UAAADI A UA  AT
```
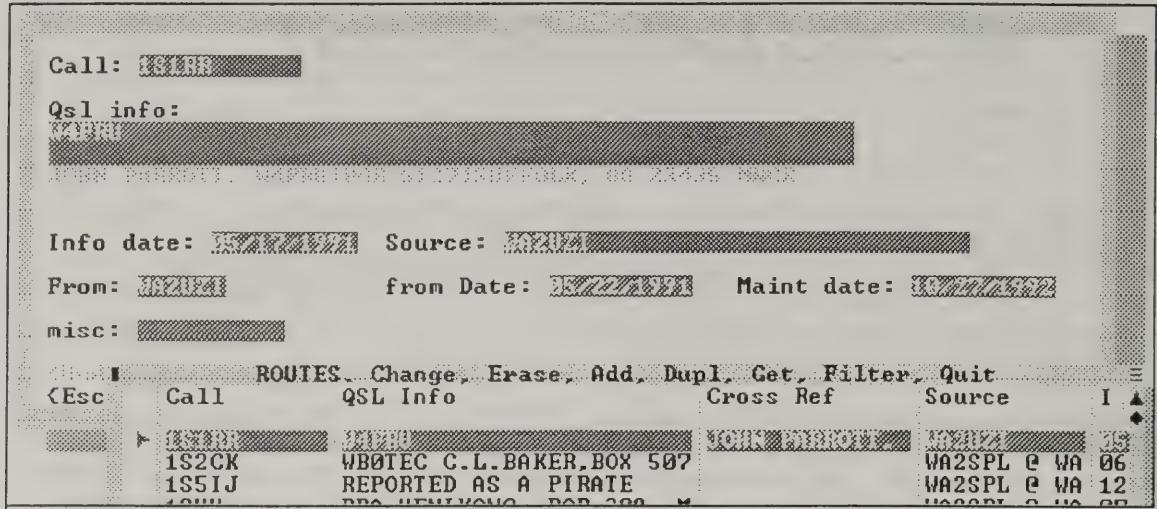
Fig 11 QSL Manager screen. Note cross-reference

The Misc Utilities feature of the Ham Setup menu includes a utility for installing PDA's QSL Route update disks. It also includes a utility to copy your QSL data to a floppy diskette so that you may send it to PDA for inclusion in our master list.

VIII. PREFIX TABLE
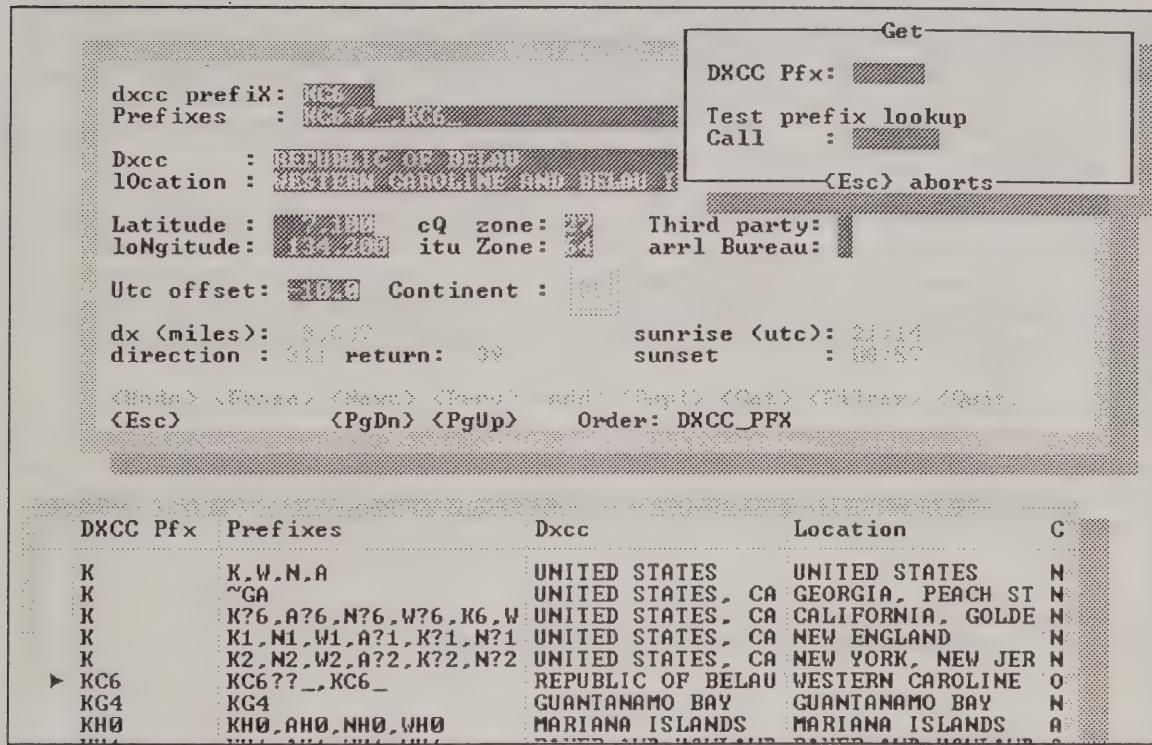
Fig 12 Prefix Table

LOGic's Prefix table contains information that relates to the prefix of a call entered in the log. The information displayed on the log screen when you enter a call--country name, distance, direction, time zone, third party traffic status, etc.--are all stored in the Prefix table. This information, as well as the Awards Table information, is updated approximately quarterly and is available from PDA on a subscription basis. However, the prefix screen allows you to maintain this data yourself.

LOGic comes with a Prefix table containing information for around 4000 different prefixes. A quarterly subscription that keeps the prefix and awards table up-to-date as the world political situation changes is available. However, LOGic includes a powerful and convenient facility for maintaining this information yourself. Select the **Prefix Table Screen** from the **Ham Setup** menu.

The first field we see is the **DXCC Prefix** field. This is the prefix used to uniquely identify a DXCC country. For instance, USA has many prefixes, but we use K to identify USA. It is taken from the first listing in the *ARRL DXCC Countries List*. The DXCC field is the name of the DXCC country. Press {F2} for a list of DXCC prefixes from the Awards table.

The **Prefixes** field contains all prefixes used by a particular location, and is used by LOGic to locate the proper Prefix table entry. It's operation will be discussed later in this chapter.

The **DXCC** field contains the name of the DXCC country. It is displayed on the Logging Screen.

The **Location** field is used to give a description of the Prefix table entry. In some cases it will be the same as the DXCC field. In other cases, it will describe a subset of a larger country. Let's take a look at Canada. Select the Get action and enter VE. All entries for Canada will be displayed in the Browse

window (you may have to scroll to see them all). There is an entry for each Canadian province, with different latitudes and longitudes, and proper zones for each. Note the entry with **VE,VO,VY**. This is an entry for Canada which will be used if you type **VE**, **VO**, or **VY** in the Call field of the Log Screen, and request DX and direction. This will be discussed later.

When entering latitude, longitude, and timezone, use the same format as you did when specifying your coordinates and timezone in the General Ham Setup Screen. Use negative longitudes for Western hemisphere locations, and negative latitudes for Southern hemisphere locations. The time zone is the number of hours to add to that station's official local time to get UTC. These numbers may be read from the small italicized numbers along the equator of the *ARRL World Map*.

It is occasionally not possible to determine a value for zone or DXCC country based on callsign. For zones, you may either enter the most popular of the values, or leave the field blank. In the case of Timezone, **0** is a valid value. Enter **99** for an unknown value. For an undeterminable country, enter the most likely candidate in the DXCC PFX field, and list as many possibilities as you can in the DXCC field. Entering a ? as the first character will alert you that the country must be determined manually. For example:

    ?TRINIDADE & MARTIN,PETE & PAUL ROCKS...

Note that the DXCC prefix should contain a dash (-), as discussed in the Awards table chapter (page 34). This will alert LOGic to determine the proper location from the Country field instead of the callsign.

The Prefix table also contains fields for DX, Direction, Return Direction, and for LOGic 4, Sunrise & Sunset times. The proper values for these fields are filled in automatically.

8.1. Specifying Prefixes

Most DXCC countries and locations within DXCC countries have numerous prefixes. For example, each call district within the USA has approximately 80 prefixes. LOGic has an elegant facility for translating a callsign into a location.

Here is how it works. LOGic first compares the whole callsign or portable prefix with every entry in every Prefixes entry in the Prefix table, looking for an exact match. If none is found, it will remove one character from the end of the call and search for an exact match on the remaining characters. It repeats this process until a match is found, or until only one letter of the call is left, and no match exists. For example, if you enter VE4ABC in the Call field, LOGic would search the prefixes for VE4ABC, VE4AB, VE4A, and then VE4. It will find a match on VE4, so it will display the information for Manitoba, Canada.

Since most locations have several prefixes, just enter all prefixes separated with a comma. If there are too many prefixes to fit in the field, simply Duplicate the record and enter the additional prefixes in the Prefixes field of the duplicated record. To see an example, Select the Get action and enter VE in the Test Prefix Lookup field.

LOGic has special wildcard matching to simplify entry of locations with many prefixes. A question mark (?) will substitute for any character. For example, look at US call district 6. Select the Get action, and enter K6 (or any California callsign or prefix) in the Test Prefix Lookup field. The prefixes list will be as follows:

    K?6,A?6,N?6,W?6,W6,K6,N6

This covers all 80-some prefixes! Since LOGic looks for non-wildcard matches before looking at wildcard matches, it will not confuse US stations beginning with A with Pakistan and other countries that have prefixes starting with A.

An underscore (_) specifies that the call *must* have a space in that position. Look at the entry for Western Caroline Islands. Get KC6 with the Get action. KC6 is problematic for most software because the prefix is also used by some Californians. Fortunately, LOGic can differentiate between the two because Californians have three letters following the KC6, and West Caroline stations have two letters following KC6. Therefore we combine the wildcard and space feature and enter KC6??_ as the prefix for West Caroline. Note also that KC6_ is also entered for a prefix. This is so that if you enter KC6 in the Call field and select DX /Direction from the Log menu pad, the information for Western Caroline instead of California will be shown.

Here are some miscellaneous pointers regarding the Prefix table:

•There is an entry for each US state. These are entered by putting a tilde (~) followed by the proper 2-letter state abbreviation in the Prefixes field.

•If the DXCC prefix contains a dash (-) (which means that LOGic should use the country rather than the callsign for determining location), place a copy of the DXCC prefix in the Prefixes field. This is necessary so that LOGic can locate this entry using the Country field of the Log screen.

•Some prefixes are included that would never actually be used when entering a callsign because there are other entries that pinpoint the location more specifically. For example, K is entered in the list of prefixes, even though entering a call would never retrieve this entry, because the Prefix table further divides the whole US by call areas. K is included for use by the DX/Direction function of the Log menu pad. Because of this K entry, you may enter K in the Call field and select the DX/Direction function, and the information for USA will be displayed.

•Use the Test Prefix Lookup field of the Get action for testing that you entered your prefix entries properly. Enter complete callsigns or prefixes, and see if the desired entry is retrieved. This feature works exactly like prefix lookup from the Log screen.

Hosenose says: The Prefix Table has *nothing* to do with awards tracking. The prefix table is a convenience for looking up beam headings and, in most cases, automatically logging DXCC, zones, etc. LOGic looks *only* at the data in the log record for awards tracking. Therefore, it is not necessary to enter deleted DXCC countries--or anything for that matter--in the Prefix Table in order to track awards.

IX. BAND TABLE

LOGic will automatically fill in the Band field when you enter the frequency in the Log screen. (or read it out of your computerized rig with LOGic 4). It will also warn you when you are operating out of your authorized bands. LOGic comes set up for a US Extra Class operator who uses 160 meters through 1300 mhz. By modifying the data on this screen, you may add new bands or adjust the out-of-band warning feature to work with your license class. Use the Band Table screen to enter the high and low edges of each band, and the band code used to refer to the band. For instance, 14.0, 14.35, and 20M. We recommend setting the band edges 1 Khz inside the band edges to provide protection against illegal sidebands. You may also enter a default mode for each band segment. This mode will be filled in when entering the Frequency, *if the mode field is blank*.

LOGic Jr. performs out-of-band checking by taking the operating frequency and checking to see if it falls between any of the low-high frequency pairs on this screen. To add a new band, simply add the high and low frequencies to this file, along with the corresponding band.

Several frequency ranges may use the same band. For instance, a General-class operator would enter both the ranges 14.026 to 14.149 and 14.226 to 14.249 as 20 meters.

LOGic Jr. checks all input in the Band field of the Logging Screen against the codes entered in the Band Table Screen to make sure that you do not automatically mistype a band code.

The Band Table is also used to control LOGic 4's packet spotting feature. See the Advanced Operations manual for details.

If you add or delete a band, be sure to do an Awards Progress Update! See page 33, 41.

```
 frequency From:  ░░1.8░░
           To:    ░░2.0░░

 Band: ░160M░

 Default mode: ░░░░

                        ▌BROWSE window. Change, Erase, Add ≡
                           From     To        Band  Default ▲░
                                                          ◆
                        ▶ ░1.8░░░  ░2.0░░ 160M ░░░░░░░
                           3.501    3.750 80M   CW
                           3.751    3.999 80M   SSB
 ⟨Esc⟩         ⟨PgDn⟩ ⟨PgUp⟩   7.001    7.150 40M   CW
                           7.150    7.299 40M   SSB
                          10.101   10.149 30M   CW
                          14.001   14.150 20M   CW
                          14.151   14.349 20M   SSB
                          18.069   18.110 17M   CW    ▼
                        ◄─◄◆                        ▶ ·
```
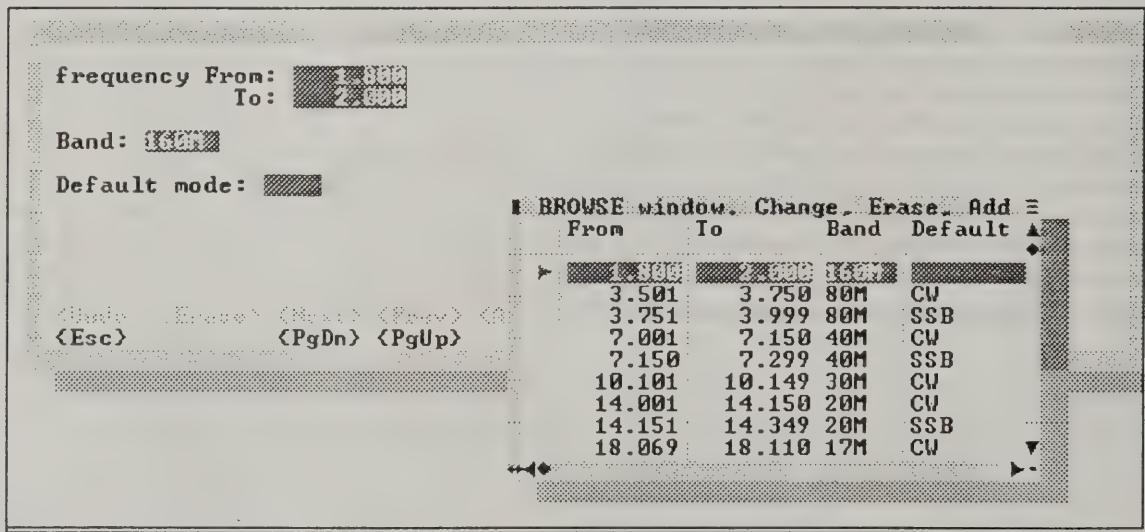
Fig 13 Band Table screen

X. LOG SCREEN CUSTOMIZATION
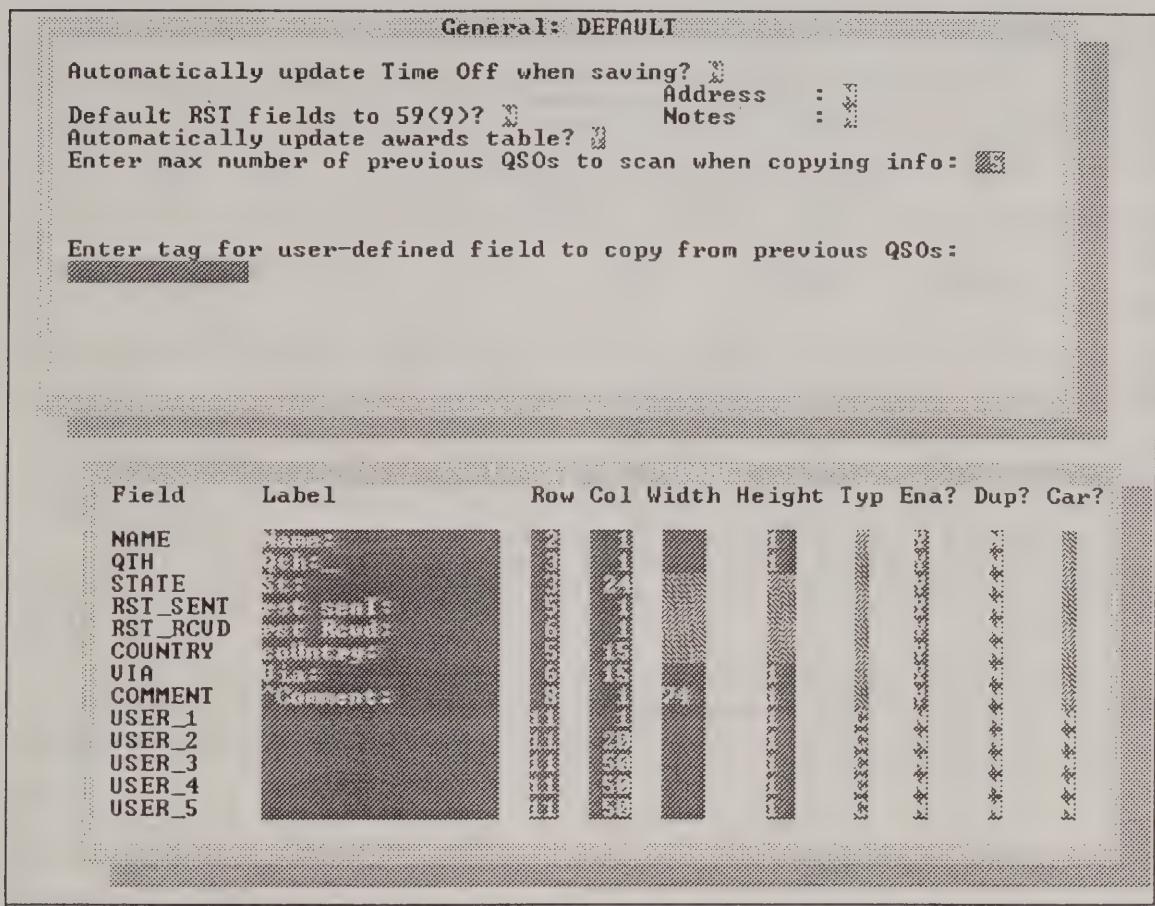
Fig 14 *Screen Configuration*

LOGic allows you great flexibility in determining the appearance and function of the Log screen. You may determine the size, position, and sequence of most fields, and control the operation of other features. Furthermore, you may set up any number of different screens for various operating activities -- DXing, rag chewing, net operation, etc. -- and easily switch from one to another.

LOGic stores the information for each screen configuration in a file that has a .CON extension. DE-FAULT.CON is special in that it determines the screen configuration that will be automatically loaded when you run LOGic. You may of course change DEFAULT.CON to your liking, but for now let's get some practice by modifying a test setup. Let's create a whole new screen configuration called TEST.CON.

Although you may make a new screen configuration from scratch, it is usually easier to copy an existing configuration that is closest to what you want to achieve. So, select the **File Manager** from the Main menu, and select **Copy**. A file selector appears. Select **DEFAULT.CON**. A second file selector appears. Enter TEST for the file name (you do not need to specify the .CON extension). We now have a duplicate of DEFAULT.CON named TEST.CON.

Next, select **Edit Log Screen** from the Main menu. Select **TEST.CON**. A window appears which allows you to set miscellaneous options such as defaulting the RS(T) fields to 59(9), automatically open Notes and/or Address windows, turn off automatic updating of the awards table, control the Copy

from Previous QSO feature, etc. Press {F1} for more information on these options. You may enter comments about the screen configuration in the Description window.

The Field Layout window controls the appearance of your LOG screen. Along the left side of this window are the names of the fields as they are stored in the Log file, plus 5 user-defined fields named USER_1 through USER_5. For each field, you may specify the *label* (the text that appears on the screen to identify the field), the ExpressKey™, whether the data field appears below or to the right of the label, the height and width of the data field, and whether or not the field should appear on the screen.

Press {F1} for details on various options. To exit Screen Configuration, press {Tab}. You will be prompted to save or discard your changes.

Important notes:

•Test your progress frequently with the **TEST** menu pad option. This displays a picture of how your Log screen data window will look, and check for row/columns that are outside the window.

•Changing the size of a field in Screen Configuration **does not** affect the size of the field in the Log file. If the size you specify is smaller than the size in the Log file, the field will scroll sideways as you enter your data. If the size you specify is larger than the size of the field in the Log file, your input will be truncated if it is longer than the field in the Log file. **You will not be warned that this is happening!** If you leave the Width field blank, the field on the screen will be the same size as the field in the Log file. To change database field size, select the **LOGFLDSZ** Miscellaneous Utility from the Ham Setup menu.

•The order that the fields are accepted has no relationship to where the fields appear on the screen. When hitting {Tab}, the cursor will move in the order that fields appear in the Field Layout window. To change the order, select the Reorder menu pad. Move the fields by dragging the ‡ symbols with the mouse. For keyboard users, follow the instructions that appear at the bottom of the screen.

10.1. User-Defined Fields

You may place up to five user-defined fields on the screen. These five fields are used just like any other field. It is not necessary to select the Tagged Fields menu.

For User-defined fields, enter the tag in the Label column after USER_1 through USER_5. Do not forget the colon. You must specify the width of user-defined fields. For instance, to place 1010#: field on your screen, enter **1010#:** for Label, **6** for width, and **N** (numeric) for Type.

You cannot specify Express Keys for user-defined fields. LOGic automatically uses 1 through 5 for the express keys for user-defined fields.

10.2. Browse Window Customization

You may alter the Browse window of the Log and other screens. You may configure the field sizes and the order which order the fields appear. This is most easily done with the mouse. To move a field, drag the column heading to the desired place. You may drag the most frequently-used fields to the left so that you do not have to pan to see them. To change a field size, drag the separator to the right of the field label.

These changes may also be made with the keyboard. Choose the Browse menu pad, and select Move Field or Size Field. Use the { → } and { ← } to effect the change.

Windows users may change the font used by Browse windows. Select Font from the **Browse** menu pad. A proportional font will display the maximum amount of data in a given column width.

XI. DATA SECURITY

A common concern of all computer users is the security of their data. At first it may seem that computerized logging places one in greater jeopardy than using a paper logbook. True, a paper logbook is not damaged by power failures, power surges, hard disk head crashes, and programming errors in the application, operating system, or BIOS. But on the other hand, how many paper logbooks have been lost or destroyed in fire? LOGic incorporates several features that, when used with minimal diligence, will keep your data safer than is possible with a paper logbook.

Hosenose says: LOGic's backup facility is a convenient way to back up your log data. It is not a substitute for regular backups of your entire system. LOGic s backup facility backs up only log data and associated notes and address info. It does not back up changes you have made to LOGic's configuration, or to LOGic 4's reports or QSL Route file. And of course it does not back up your system configuration or your other programs.

Your hard drive will fail. It is not a matter of *if* but *when*. You have spent many hours installing everything on your system. If you have a complete backup, recovery is a fairly painless process. If you don't, it is a nightmare.

11.1. Buffer Flushing

Since a hard disk is relatively slow compared to the speed at which your CPU can process data, all programs utilize some sort of *buffering* to minimize disk access. Buffering utilizes your computer's RAM as an intermediate holding place in such a way as to reduce the number of times your program must access the disk. Without this buffering, your program would be too slow to use since it would spend most of its time waiting on the disk drive. And if there were no buffering, your disk drive would have to work much harder, and would wear out sooner.

With disk buffering comes increased risk of loss of data. If your system fails before the buffering logic gets around to *flushing*, or writing the buffered data to disk, it is gone. LOGic's buffering is implemented in such a way that usually only one or two QSOs are lost, if any. However, LOGic offers you two levels of buffer flushing that are a compromise between speed and security. Under the Options menu pad is an Auto Flush option. When enabled, LOGic attempts to flush the file buffers every time you add a new QSO. This will result in a noticeable delay on some systems. With Auto Flush off, LOGic will attempt to flush the buffers at least every five minutes. This doesn't mean that you will lose 5 minutes of work, but you could.

Additionally, LOGic will always attempt to flush the file buffers when exiting a screen, or when selecting the Flush File Buffers from the ACC menu pad. So, if you leave your computer with LOGic running, get in the habit of exiting the Log screen, or selecting the Flush File Buffers accessory.

Also, note that we said that LOGic *attempts* to flush the buffers. Some disk caching programs may prevent LOGic from doing this. However, most disk caching programs will cache writes for a maximum of 5 seconds or so.

11.2. SafetyLog^{tm}

If you absolutely cannot accept any data loss, LOGic's SafetyLog^m feature will send a copy of each QSO to a printer or disk drive. This data is in a comma-delimited text file format that is human-readable, yet may be imported back into LOGic should the need arise.

To enable the SafetyLog feature, enter any valid DOS device or filename in the SafetyLog field of the General Ham Setup screen. Any time you add a new QSO, the last QSO is written to this device.

Use care in selecting a device to write the SafetyLog to. A laser printer is pretty useless in this regard, since it won't print anything until it has received a full page of data. If the power fails, the data is gone. A dot-matrix or ink jet printer is ideal except for the fact that the data must be rekeyed if the worst happens. When using a printer, make sure that auto end-of-line wrap or condensed mode is enabled. If necessary, enable these features from the printer's control panel. LOGic does not use the printer driver when writing the SafetyLog.

The ideal SafetyLog device is a hard drive that is *physically separate* from the hard drive which contains LOGic's data. By "physically separate" we mean a hard drive that is a separate unit and not merely a partition of the same drive. LOGic flushes the SafetyLog file after each QSO, and therefore is quite secure, since it isn't likely that two drives will fail simultaneously. A floppy drive is excellent from a security standpoint, but is very slow. Using a different partition of the same physical drive will provide some protection.

To import SafetyLog data, select SAFELOG from the Miscellaneous Utilities in the Ham Setup menu.

11.3. Backup/Restore Log File

LOGic includes an advanced backup/restore facility for convenient and fast backup of your log data. Data compression is used, so up to 40,000 QSOs may be stored on a single 1.44mb floppy! This not only saves money on diskettes, but makes backup easier, as most users will not have to insert multiple disks when making a backup. The Backup/Restore facility is accessible from the Main menu.

Keep a few formatted, empty floppy disks available at all times. The backup facility cannot use unformatted diskettes. It will not erase existing data on the floppies except for data created by a previous LOGic backup. If your log is too big to fit on one floppy, you will be prompted for additional floppies until the backup is completed. Number each floppy. LOGic will not overwrite a floppy that belongs to the current backup set if you insert it by mistake.

Keep at least two sets of backup disks, and always overwrite the oldest. If you have only one set of disks, and your hard disk crashes while doing a backup, you will be left without your data or a backup! Also, it is a good idea to keep a backup copy of your log at work or some other place where it will be safe if something happens to your home.

To restore your data, select the Restore option, and insert the first diskette of the set. You will be notified if you inserted a diskette other than the first. The data will be read from the floppy and uncompressed into a scratch file on your hard disk. You will be given the option to replace the current log data with the restored data, or to append the restored data to the current log data. If you choose append, you could end up with duplicate QSO records. These may easily be removed with the DELDUPES option of Miscellaneous Utilities on the Ham Setup menu.

11.4. Crash Recovery

After a power failure or system crash, LOGic will often proceed to function normally without any recovery procedure. If it detects any bad indexes, it will fix them automatically. However, it is a good idea to exit LOGic and execute the CLEAN command. This will delete all index and scratch files. LOGic will rebuild them when you restart. See *Troubleshooting* on page 44, 59.

XII. SYSTEM SETUP AND UTILITIES

The Utilities Menu accesses facilities for modifying colors, changing system-wide defaults such as the format used for dates, and utilities for maintaining your database.

12.1. OPTIONS Menu Pad

Many of LOGic's system options may be changed at any time with the Options menu pad. Here is a description of their functions. The initial state of these options may be chosen with the General Options screen, which we will discuss next.

•*Update Browse* If this option is selected, the Browse window will always display the same record as the Data window. If this option is not selected, the Browse window will only be updated when it is the active window. Deselecting this option will speed up operation on slower systems.

•*Auto Flush* Determines how often the file buffers are flushed to disk. If turned off. flushing may occur only every 5 minutes. If it is turned on, the buffers will be flushed every time you add a record. See page 43.

•*Auto Field Exit* If this option is enabled, and your typing fills a field, the cursor will automatically jump to the next field. If it is disabled, you must press {Enter}, { ↓ }, or use the mouse to exit the field.

•*Beep on filling field* If this option is selected, and your typing fills a field, your computer will beep.

•*Shadows on windows* (DOS only) If this option is selected, drop shadows will appear behind all windows. This not only looks attractive, but makes it easier to see which window is on top when you have many windows open. This option is recommended only for color monitors.

•*Sticky menus* (DOS only) This option affects mouse users only. If enabled, and you select a menu pad, the associated popup will remain on the screen even after you release the mouse button. To get rid of the menu popup, you must make a selection, press {Esc}, or click somewhere outside the popup. If this option is disabled, you must hold the mouse button down while you move the pointer to the desired option. When you release the button, the popup will disappear,

•*Mouse speed* (DOS only) This option allows mouse users to set the mouse pointer speed. Higher numbers result in more pointer motion for the same amount of hand movement. Higher numbers allow for faster mouse operation and smaller mouse mats, but require more coordination. If you are having trouble using the mouse, select a slower setting, and increase it as you gain experience.

12.2. General Options

This screen allows you to choose the initial state of all of the Options menu pad items, and set other options that affect the general operation of your system. Of particular interest are options that allow you to choose 2 or 4-digit year and one of several date formats (such as MM/DD/YY or DD.MM.YY) that you are most familiar with. The options on this screen do not change how data is actually stored, only how they are displayed on the screen. Feel free to experiment and change them at will.

Press {F1} for more detailed information about the options on this screen.

Windows users may select fonts to be used by LOGic's main window (screen), menus, and data windows. Choose **FONTS** from the menu bar. You must select a non-proportional font for the data windows. A non-proportional font uses the same amount of space for each character. For example, an "M" takes the same amount of space as an "i".

MiMiMi This is a proportional font (Times New Roman)

MiMiMi This is a non-proportional font (Courier)

Courier and FoxFont are non-proportional fonts.

The font you select for menus and data windows affects the size of the windows. 9-point is a good starting place for 400 x 800 pixel displays. TrueType fonts are supported.

12.3. Colors and Monochrome Enhancements

LOGic makes good use of color for making aesthetic and user-friendly screens. You may change the colors or mono enhancements. Use LOGic's online help for details on changing colors.

There are many, many options to change, so proceed slowly. You may select OK to exit the color screens, then try your application to see how you like the changes. If you like them, return to the Colors menu, and select << **Save** >>. If you don't like them, simply exit the program and start it again. The original colors will be loaded.

Your changes do not take effect until the items that you change are redrawn.

12.4. Maintain Database

This menu allows you to repair bad indexes, and reorganize your data so that it may be accessed faster or take less disk space. See the online help for more info.

12.5. Information About System

This option displays miscellaneous information about your system in a scrollable Edit window. Of particular interest to all is the information related to the disk drive(s) used by your application. If you are experiencing problems, check to make sure you are not low on disk space. Better yet, check periodically to make sure you don't run out!

Other information on this display will be of interest to advanced users, and may be requested by tech support if you are experiencing system-related difficulties.

12.6. Database Command Screen

This screen accepts most xBase-style commands. It allows advanced users to do things like change database field sizes, import data for which no custom import program is provided, export LOGic data, and copy or delete groups of records.

A summary of commands is not provided with LOGic, as they are numerous. The FoxPro reference manual is around 1200 pages! The best source of info on these commands is a FoxPro 2 book, available from most libraries and any computer bookstore. Any book covering an xBase-style language will also do.

Needless to say, this screen can be devastatingly powerful. For example, the following commands will delete all QSOs in your log:

```
SELECT LOG
ZAP
```

Be sure to make a backup before playing with it unless you know what you are doing!

12.7. Locate Data

LOGic will allow you to locate your data in a directory other than the one in which LOGic is installed. This is particularly useful for family stations. This option brings up a file selector that will allow you to select which database to use.

For information on setting up a second database, and automating the process of selecting a database, use the online help facility. Press {F1} while in the Utilities menu.

"See what happens to computers that don't cooperate?"

©1993 by Fillmer Hevener, Jr.

XIII. PRINTOUTS AND QSL MANAGE-MENT

LOGic's reporting facility is unsurpassed for ease and flexibility in printing your log information and QSL cards/labels. It will work with any printer which DOS can access, or "print" the information to a scrollable, panable window for preview or for those who do not have a printer. Output may also be sent to disk for easy transport to another computer and printer.

Most reports have several options to best suit your needs and can print *any* subset of your log that you desire.

All reports included with LOGic 4 and LOGic Jr. were created with LOGic 4's WYSIWIG (what you see is what you get) report writing facility. LOGic 4 customers can create their own reports from scratch, or make modifications to LOGic's existing reports.

13.1. LOG

Before learning about the intricacies of this sophisticated tool, let's run a basic log report to see how easy the reporting facility is to use. From the Main menu, select **Reports**. Select **Run Report** from the Reports menu. A file selector appears listing all reports included with LOGic. Choose **LOG**.

First, select the Report menu pad and type S to route the output to your screen. Now, notice the window asking you to specify a user-selectable field to appear on the report. The LOG report always reports the usual information such as call, date/time, signal reports, etc. You may specify one additional field to be printed--even a user-defined field. To print a user-defined field, simply enter the tag--i.e. 1010#:. You may also specify whether or not the Comment field should print, and how many lines of Notes, if any, should print. Press {Enter} to continue.

Next, you are asked to specify the *order* that the log should be printed. With this report, you have three options: In order by Callsign, Chronologically, or by QTH. Normally, paper logbooks are in Chronological order, with the earliest QSO at the top of the first page. However, an alphabetical listing by callsign could be useful for QSL managers.

The QTH option is more for illustration's sake than anything. It prints a log report that is alphabetized by QTH. The * next to the QTH option means that LOGic does not normally maintain an index by QTH, and alerts you that it will take a some time -- typically few minutes or so for a large log -- to arrange the database if you select this option.

Next, a window appears that lets you specify which records to print, and other options. We will discuss it in detail later. For now, press {Tab} to exit this window. There will be a delay of several seconds as LOGic generates the report. When it is complete, it will be displayed in a scrollable edit window. Since the report is too wide to be displayed on your screen, you will have to use the scroll bar button along the bottom or the { → } key to see the rightmost columns of the report. Note that a count of the number of QSOs reported appears at the end of the report. Press {Esc} when done viewing the report. Press {Esc} again to return to the Report menu. Run the Log report several times, trying different options. You will be impressed with the flexibility of this simple report.

13.2. Setting Up for Your Printer

This section is for DOS users only. LOGic for Windows uses Windows print devices and drivers.

For your printer to function properly with the reporting facility, you must specify the proper DOS name for the port that the printer is plugged into, and specify a *driver* that will work with your printer.

LOGic uses port LPT1 by default. You may specify a different printer port from the Report menu. To change the startup default, change the General Options in the Utilities menu.

After connecting your printer and specifying the proper port, you must select a *printer driver* that will work with your printer. A printer driver is a list of codes used to control your printer's special features such as condensed print, bold type, etc. It also contains information *about* your printer such as the width of the carriage. LOGic uses this information to determine the proper character size to use to fit the report on the size paper you are using. Select the driver that most closely matches your printer. Most dot-matrix printers will use the EPSON-FX driver. Most laser printers and HP ink jet printers will use the HP driver. If no driver is provided that will work with your printer, you may easily create your own with the Edit Printer Driver option. Press {F1} for details. However, try the included drivers first. They will work with 99% of the printers on the market.

If your printer is not supported, and you cannot locate the printer's manual that specifies the codes it uses, you can still use it with the printer driver **NONE**. This driver sends plain ASCII characters to the port without control characters. Most LOGic reports require 132 columns, so if your printer is a narrow-carriage, set it to condensed mode manually.

You may change the default driver that gets loaded when you start the program with the General Options of the Utilities menu.

13.3. Select Criteria

In the previous section where we ran the Log report, we skipped over the Select Criteria field, and printed our entire log file. However, since we have backup copies of our log file on diskette, it is unlikely that we would ever want to actually print everything in our log. LOGic makes it easy for us to print only desired records -- all QSOs on a given band, all QSOs between two dates, all DX who owe us a QSL, etc. In fact, we can easily look at any field or combination of fields when selecting which QSOs to print. All we have to do is enter a logical expression in the Select Criteria field!

"Wait a minute!" you say. What is an *expression*? An expression is merely a set of words or symbols that define a desired result. Anyone who has ever used a calculator has used expressions. 1+1, 79.95x×.05, and 22÷7 are all expressions. These expressions are all numeric -- they all have numeric results.

A Select Criterion is even simpler. It has a *logical*, yes/no or true/false result. For example, NAME="BOB". If we were to enter this expression for a select criterion, LOGic will ask "is this person's name BOB?" for each QSO in the log. If the answer is *yes*, the QSO will be printed. We have already made use of logical expressions when we used the Filter action with the LOG screen. LOGic translated our input to logical expressions which were displayed at the top of the screen and used to filter the records so that only the ones that we wanted to see were displayed.

By following a few simple rules, we can easily create a logical expression to print anything we desire. We simply use a few simple *relational operators* to compare two values. You are already familiar with these operators: -, +, ×, and ÷. These are **numeric operators**. They act on two numbers and yield another number as a result. Relational operators compare two values and return a yes/no result. The most popular logical operator is =. If the two values on either side of the = are identical, the result is true. The following are true expressions:

$$1 + 1 = 2 \qquad 3 = 3 \qquad 5 - 6 = -1$$

Although there would be little point, we could enter 1+1=2 for a select criterion. It is a valid logical expression. Since it is always true, the report writer will print every QSO in the log. What would make more sense would be to compare the Frequency in the log file to some value. To do this, we would enter something like

```
FREQ = 146.52
```

This will report all of our two-meter QSOs on the national simplex frequency.

Suppose we wanted to report all of our VHF QSOs? Or everything *except* our 2-meter simplex QSOs on the national simplex frequency? Fortunately, there are other relative operators. Here is a complete list:

=	Equal
<> or #	Not Equal
>	Greater than
<	Less than
>=	Greater than or equal
<=	less than or equal
$	contained in

We can report all QSOs except the ones on 146.52 with `FREQ<>146.52`

We can report our VHF QSOs with

```
FREQ>30        or        FREQ>=52
```

So far we have been comparing numbers. We can just as easily compare characters. Just enter the field name from the log, a relative operator, then the value to compare to enclosed in single or double quote marks. For example,

```
NAME="ANN"
COUNTRY<>'K'
```

We must enclose the literal character values that we are comparing log fields to in quotes. This is how the computer differentiates between database field names and literal values. NAME=ANN would try to compare the contents of the NAME field with the contents of a field named ANN. Since there is no field in the database named ANN, you will get an error.

= and <> make sense when comparing character values. But what about >, <, >=, and <=? Though they are not frequently used, they are also legitimate relative operators for characters. A character is greater than another if it appears alphabetically after that other character. In other words, "B" is greater than "A" but less than "C". Numbers entered in character fields are less than letters. So "9" is less than "A". The **ASCII Chart** accessory shows the relative value of all characters.

> *Hosenose says:* We must enclose the literal character values that we are comparing to log fields to in quotes. This is how the computer differentiates between database field names and literal values.

When comparing two character values using these operators, the comparison is only done to the end of the rightmost value. So NAME="ANN" will match ANN, ANNETTE, ANNIE, etc. To force an exact match, place a space after the value to be compared. For example, NAME="ANN ". Except for $ (discussed later), **you must put the field name to the left of the operator.** While "ANN"=NAME is a valid expression, it would not select anything,

since the rightmost value--the NAME field in the database--is longer than 3 characters and therefore padded with spaces. LOGic will compare through the end of the field since it is on the right of the operator, and will not match.

A very useful operator that works only for comparing characters is $. It means "Contained in". "1010#:"$COMMENT will be true if **1010#:** occurs *anywhere* in the comment field. This expression will, of course, print only our Ten-Ten QSOs.

Memo fields (Notes and Addresses) may be treated as character fields. The $ operator is particularly handy for searching them. Since you may enter lower-case characters in memo fields, you may wish to upshift them with the UPPER() function before comparing. "QUAD"$UPPER(NOTES) will upshift all note fields, then look for QUAD anywhere in the note. The UPPER function *does not* permanently alter your data! It simply upshifts a copy of the note which is in RAM before doing the compare.

Dates may also be compared using any operator discussed thus far except $. One date is greater than another if it occurs *after* the other date. Date values to be compared must be entered inside squiggly braces: { }. Enter the date as it appears on the log screen. This will vary depending on the date format you selected in the General Setup screen. For American MM/DD/YY format, our select criteria would look like this:

```
QSO_DATE > {12/31/92}
```

This reports all QSOs made after December 31, 1992. The DTOS function can simplify comparing dates. It converts a date to a character string that is always in the format of "YYYYMMDD". So, DTOS(QSO_DATE)>"19921231" will report all QSOs made after December 31, 1992 regardless of the setting of the date format.

Practice entering various expressions in the Select Criteria field. Press {F2} to get a menu of fields and operators. If you prefer, you may practice with the Filter function of the Log screen. Just select EDIT FILTER. It works exactly like the report writer's Select Criteria field.

So far we have been comparing only two values--a field in the database with a literal value. Suppose we wish to compare more than two values? For instance, everyone named Bob or Robert, or all 10-Meter FM QSOs? Logical operators allow us to combine two logical expressions. Our logical operators are:

    OR
    AND
    NOT

For the final result to be true with OR, only one of the two expressions involved need to be true. With AND, they both must be true. Consider these two expressions:

```
BAND="10M " OR MODE="FM "
BAND="10M " AND MODE="FM "
```

The first will report all 10-meter QSOs as well as all FM QSOs. The second will report only FM QSOs made on 10 meters. Here's why. With OR, only one of the two expressions need be true for a QSO to be printed. So, LOGic looks at every QSO in the log. It checks each condition. If **either** condition is true--the band is 10 meters OR the mode is FM, the record gets printed.

With AND, LOGic again reads all QSOs. For each QSO, it checks to see if the BAND is 10M AND if the MODE is FM. The record is printed only if **both** conditions are true.

Suppose we wish to combine more than two comparisons? No problem. We can use AND and OR multiple times. For example
```
NAME="ROB " OR NAME="TOM " OR NAME="BILL "
```

will print all QSOs with anyone named Rob, Tom, or Bill. We can use parenthesis to group expressions. This is important when combining AND and OR.

```
(NAME="ROB " OR NAME="TOM") AND QTH="PODUNK"
```

will not have the same effect as

```
NAME="ROB " OR (NAME="TOM" AND QTH="PODUNK")
```

The first will print only operators named Rob or Tom, and only if they live in Podunk. The second will print anyone named Rob regardless of where he lives, plus anyone named Tom living in Podunk.

Be careful with AND. It is possible to create an expression that is technically valid, but is useless since it is always false. For example, NAME="ROB " AND NAME="TOM " cannot possible be true, since the Name field cannot be equal to both TOM and ROB at the same time.

Another useful operator is NOT. It operates only on the expression to its right, and reverses the trueness or falseness of the expression. NOT (BAND="10M " AND MODE="FM ") will print everything **except** our 10-meter FM QSOs. It is the same as BAND<>"10M " OR MODE<>"FM ". However, most people have an easier time understanding the first expression when they are thinking about excluding something. To exclude a set, simply enter an expression that would select the records you wish to exclude, then use NOT to reverse the condition.

We have been comparing database fields with literal values. However, there is no rule that says we can't compare database fields. QSL_SENT<>QSL_RCVD will report all QSOs whose QSL Sent status is different from the QSL Rcvd status.

This concludes our discussion of select criteria. Here are some sample select criteria for your enjoyment.

`STATE="WA"`	(State is Washington)
`STATE<>" "`	(State is not blank)
`QSO_DATE>={01/01/93}`	(QSOs on or after Jan 1, 1993)
`QSO_DATE>={01/01/93} and QSO_DATE<={01/31/93}`	(QSOs made during Jan 93)
`QSL_SENT="R"`	(QSOs with QSL requests pending)
`"CNTY:VA,BUCKINGHAM|"$COMMENT`	(user-defined field search)
`COUNTRY<>"K "`	(DX QSOs for US operators)

Fig 15 *Sample select criteria.*

13.4. Range Selection

Range selection takes advantage of LOGic's indexes to speed up printing of large files. Normally, the report program reads each record in the file and compares it to the select criteria, if any. So even if you want to print a few records, the computer must read the entire file. However, if you are able to use range selection, the program will read only part of the file. It functions much like the Get action.

Range selection can often be a convenient substitute for a select criteria when printing a range of dates. For a simple selection of a time period, all you have to do is enter two dates!

To specify a range selection, Move the cursor to the Range Selection field and press {Enter}, or click it with a mouse. A screen displays information about each index, and the highest and lowest associated value in the database. For instance, for CALL you will see the first and last calls that would appear in an alphabetical listing by call of your log. The index that is most likely to be useful for

range selection is CHRON. It is a combination of the QSO_DATE and TIME_ON fields, and can be used for selecting date ranges.

Enter new high or low values anywhere you desire. For CHRON, you must enter the date/time as it is stored in the index: YYYYMMDDHHMM. So, to print all QSOs for Jan 1993, enter 199301010000 for the low value, and 199301312399 for the high value. Press {Tab} when you are done specifying high and low values.

LOGic will now proceed to read only records with values that fall within the high and low values of the range selection. It will still apply the select criteria, if any, to all fields read. Therefore, if you want to print all 10-meter FM QSOs made during Jan 1993, enter the range for CHRON as described in the previous paragraph, then enter BAND="10M " AND MODE="FM " for the select criteria.

```
                              Run Report
                    D:\USR\FOXLOG\REPORT\LOG.REP

     Select criteria <blank for all>:


     Beginning page:                 (X) Range selection
     Ending:

     Copies:

          OK        Quit


                       ═══════════ Select range ═══════════
     Tag: CALL          Expression: CALL
     Low:
     Hi :

     Tag: CHRON         Expression: DTOS(QSO_DATE)+TIME_ON
     Low:
     Hi :

                        «  OK  »  <Cancel>
             ═════Press <Tab> when done, <Esc> for no range selection═════
```
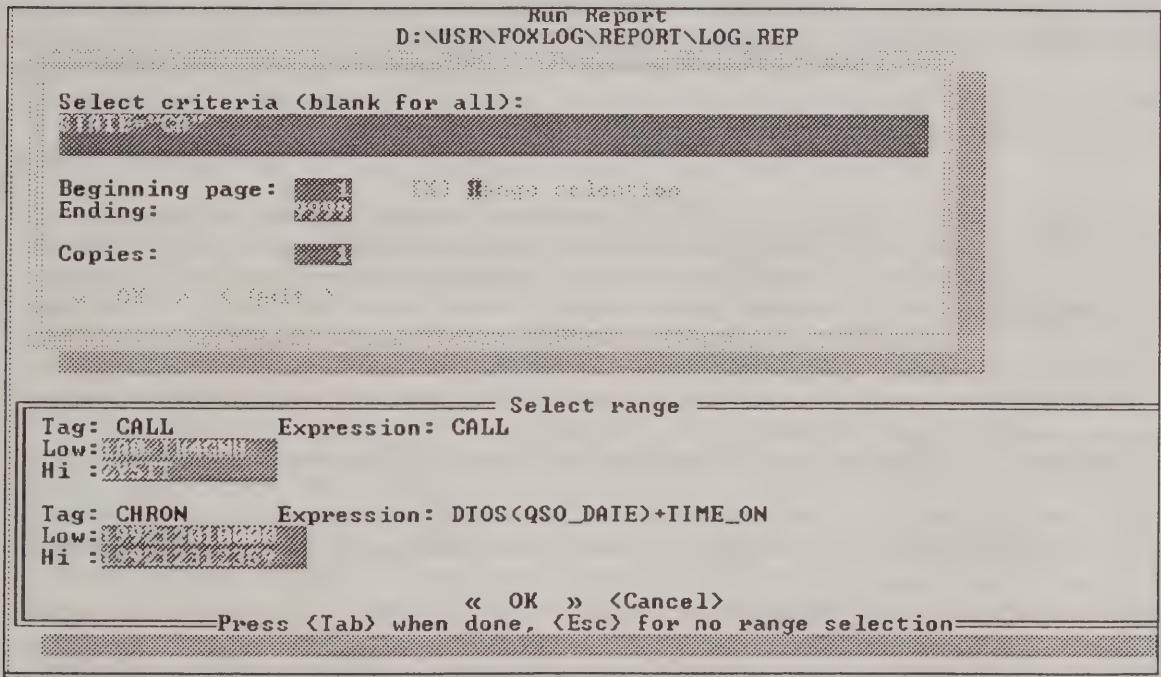
Fig 16 Running a report. Select criteria and range selection

13.5. QSL Management

LOGic Jr. includes several reports relating to QSLing. With them you may print QSL cards, mailing labels to paste on your existing cards, and automatically update the QSL Sent field.

Note that you may log a comment to appear on the card or create a confirmation for a SWL reports with user-defined fields. See page 29.

There are several reports related to QSL management:

•*QSLCARD* prints QSL cards on 3.5" x 5.5" or 3.5" x 6" post card stock. Your name, address, call, and a line of station info is obtained from the General Ham Setup screen. Print address labels with ADDRLBL. LSRQSLC prints on sheet-feed laser postcard form, 3 cards per page.

•*QSLLABL* prints exchange information on standard 3.5" x 15/16" gummed labels for you to stick on your present QSL cards.

•*LSRQSL2 and LSRQSL3* are for use with laser printers. LSRQSL2 prints on 2-across 1" x 4" labels at 16.66 or 17 CPI (characters per inch). LSRQSL3 prints 3-across 2 5/8" x 1" labels at 20 CPI. Note that many laser printers do not support 20 CPI.

•*ADDRLBL* prints address labels. LSRADR2 and LSRADR3 print 2-across and 3-across laser printer labels.

All of the QSL card and label reports discussed thus far will ask for a line of info to print on **all** cards/labels. It is ideal for seasonal greetings. You may also print a personal message by entering a user-defined field with a tag of **QSLMSG:** and a terminator of | with the QSO. See page 29.

The exchange info prints rather nicely. Frequency will be used instead of band if frequency is not blank. If frequency is blank, the band will be used. "Please QSL!" or "Thanks for the QSL." is printed if appropriate, based on the contents of the QSL RCVD field.

•*QSLMULT* prints up to three QSOs per label on standard 1-across 3 1/2" wide stock. This is excellent for DXpeditioners and contesters. For 1-across labels only.

All QSL printouts--cards, exchange labels, and address labels--are run basically the same way. QSLLABL prints exchange labels and address labels. If you use QSLCARD, or one of the laser exchange labels, you will have to print the addresses in a separate run. If this is the case, it is best to run the address labels first, as we will see in a moment.

Make sure that you have some QSOs in the log with QSL SENT set to R (Requested). Select **Run Report** from the Report menu, and select a label or card program. You will be asked if you wish to print single or multiple records. Normally, you will want to print multiple records. However, you may select Single Record. If you select Single Record, you will be prompted for each QSO that you want to print.

Next, you will be given a choice of printing the cards or labels in Callsign, Country, Chronological, or District order. District order prints by callsign within call district (this is useful for non-US stations who are submitting cards to the ARRL incoming bureau).

If you elected to print single records, choose CALL for the order. This will cause the report writer to prompt you for the callsign of the station to print a QSL for. If you select another order, for example, CHRON, you will be prompted for date/time. A scrollable window will appear with the log data in it. If there is more than one QSO with the requested station, you may scroll up and down to select the desired record.

If you selected Multiple Records, you will be prompted for Select Criteria as you were when running the Log report. The select criteria already has **QSL_SENT="R"** in it. This will print all outstanding QSL requests. You may of course change this select criteria. For example, QSL_SENT="R" AND COUNTRY<>"K " prints all outstanding DX cards.

When using the multiple-record mode and printing cards or exchange labels, you will be asked if you would like to change the QSL Sent field to F (Fulfilled) for the records that were printed. This will record the fact that the cards have been sent, and prevent the QSOs from printing the next time you run the report. However, **do not answer Yes unless you have all cards, exchange labels, or address labels in hand, and are satisfied that they printed correctly.** If the forms were not aligned properly, or you forgot to run address labels, and you updated QSL Sent to "F", you have problems. The only way to change the Fs back to Rs is to change them manually with the log screen, or recover from a backup. So if in doubt, don't answer Yes to this option. You can always update the flags at any time by re-running the report. If you don't want the output, just select **Print to Screen**.

The address label programs do not offer the option to update the QSL Sent field. Therefore, you can save a step by running the address labels first. If you run the exchange labels or cards first, you will have to answer No when asked if you want to update QSL Sent, then run the address labels. Then you

will have to run the exchange label or card program again, sending the output to the screen, to update the QSL Sent fields.

13.6. Awards Reports

LOGic's online awards tracking is used for on-the-air progress check. The reporting facility generates printouts showing your progress. These reports are typically used for submission with an awards application, and to do more complex analysis that cannot be done online. For example, printing all QSOs that would count towards an award if only you could get a card from them!

The report AWARDS is used for reporting progress on any award in which you get credit for working each of a set of entities. It is directly submissible for many awards including DXCC. This includes most awards--DXCC, WAS, WAC, WAZ, etc. The report 1010 is used for ten-ten and other similar awards where you get credit for working a given number of new members.

13.6.1. AWARDS Report

Let's try AWARDS. Select Run Report, and select AWARDS from the file selector. A window appears offering you many options. First, enter the tag identifying the award in the first field. Don't forget the colon! A list of awards that are entered in the Awards table is displayed for your convenience. However, you are not limited to these awards. You may also enter a tagged field used for non-edited awards tracking, or a tagged field that is in no way associated with LOGic's online tracking. The awards report does not read the online progress tallies. It reads your entire log and analyzes the QSO data directly. Enter WAS: for our example

Next you will be asked to enter a mode or modes to be included on the report. Use this option for running an SSB-only or CW-only report. You may specify more than one mode. For instance, you may want to enter RTTY, PKT for a digital-modes award. You may also enter a band for a single-band award. If you leave both band and mode blank, the report will be mixed-band/mixed-mode.

If the award you are printing is entered in the Awards table, you may answer Y to **Report Unworked Entities?** This will cause entities that have not been worked, and therefore not on your log, to be printed. This option will work only if the entities have been entered on the Awards table. It will not work with non-edited tags.

If you have marked your submitted cards, enter the tag indicating this. For example, WASSUB:

You may specify a user-defined column to appear on the report as you did with the Log report. For instance, you could print ten-ten numbers by putting 1010#: here.

Finally, you may enter an initial select criterion. This will cause LOGic to consider only the QSOs matching the select criteria when analyzing your data. For instance, if you want to run a WAS report of only ten-ten QSOs, enter

        "1010#:"$COMMENT

Only QSOs that contain 1010#: in the comment field will be considered. All other QSOs will be ignored.

The report writer will proceed to analyze your data. For example, if you are running a WAS report, it will first locate all QSOs with a state logged. Next, it will find all QSOs with a tag marking submitted cards. For the states without submitted cards, it will look for your best QSL Rcvd status -- first for F (fulfilled), then R (Requested), then blank. If no QSO is found, it will show it as unworked if you requested this option.

```
┌════════════════════════Awards Progress Report════════════════════════┐
│ DXCC:,WAS:,ARRL SECT:,CNTY HA:,CNTY HB:,CNTY:,CNTYCA:,CONT:,CQZ:,I PROV:, │
│ ITUZ:,JCC:,JCG:,OBL:,PACC:,SP PROV:,TPA:,TWIN TOWN:,VE PROV:,WAJA:       │
│                                                                          │
│                                                                          │
│    Enter tag: ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓                                          │
│                                                                          │
│    Enter mode, or modes separated by a comma.  Blank for all modes:     │
│    ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓                            │
│                                                                          │
│    Enter band, or blank for all bands: ▓▓▓▓▓▓                           │
│                                                                          │
│    Print unworked entities? ▓                                           │
│                                                                          │
│    Enter tag marking submitted cards: ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓                    │
│                                                                          │
│    User-selectable field.  Enter VIA, COUNTRY, OPERATOR, PWR, QTH, STATE,│
│    NAME, or a user-defined field (don't forget the colon!):             │
│    ▓▓▓▓▓▓▓▓▓▓▓▓▓                                                         │
│                                                                          │
│    Initial select criteria:                                             │
│    ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓    │
└══════════════════════════════════════════════════════════════════════════┘
```

Fig 17 *Requesting WAS report for 1010 RTTY/TOR*

The report must know if the entity you are tracking is numeric or character so that they will sort in the proper sequence. Usually, the report can get this information from the Awards table. If the award is not on the Awards table, you will be asked to select Numeric or Character. Enter N if all awards values are numeric. Enter C if the values are letters or a mixture of letters and numbers.

LOGic will take a few minutes or longer to analyze your data, depending on how big your log is. After it has finished, you will be asked what order the report is to be printed. Award value will print it in order by state, DXCC prefix, zone, etc. Band/Mode prints in the order required by DXCC.

Finally, you will again be given an opportunity to enter another select criterion. It is important to understand how this works. LOGic has already extracted one QSO for each state worked, plus it has made a dummy record for each state not worked if you requested this option. If you use a blank select criteria, each state will be printed. Suppose you wanted to print only unconfirmed entities? Simply enter QSL_RCVD<>"F" for the select criteria. QSL_RCVD="F" will print only confirmed entities. Records representing unworked entities have a special QSL Rcvd status of U. To print unworked entities only, enter QSL_RCVD="U". You may use OR to print any combination of statuses. For your convenience, all status are included as a default select criteria. Simply delete the ones you do not wish to print.

To print only QSOs with submitted cards, use the $ operator to search the COMMENT field for the tag that marks submitted cards. For example: "WASSUB:"$COMMENT

13.6.2. 1010 Report

This report is for 10-10 awards progress reporting as well as other awards that work on the same principle. We will use 10-10 as an example. The 10-10 International organization, which encourages use of the ten-meter band, awards membership to any applicant who has worked ten members on ten meters. Additional awards of various levels are available for working more than ten members. For instance, there is an award for working 100 members.

Select **Run Report** and select **1010**. Enter the tag. You may specify band, mode(s), a user-selectable column, and a select criterion as you did for the Awards report.

Next you are asked to enter a starting number and the number of QSOs to report. It is necessary to digress and explain how this report works. It first extracts only the first QSO with each entity worked. For instance, if you worked numbers 2318, 56745, and 25634, then worked 2318 again, the report would ignore the second 2318 entry. So, if we entered 1 for the starting number, and **9999999** for the

number of QSOs to report, the first QSO with *all* 10-10 stations would be reported. However, you usually want to report a certain number of QSOs. For instance, you would enter 1 and 10 to report the first 10 numbers worked for submission with your membership application. If you have already earned your 400-number award and are submitting for your 500-number award, you would enter 401 for the starting number and 100 for the number to be reported.

Note that this report is not specific to 1010 reporting. It may be used for other awards that work in a similar manner, including counties.

13.7. Other Reports

LOGic contains many other reports that print beam heading charts, various different styles of QSL labels, awards table, and more. A description of these reports appear in the Description window when you run the report. Check them out.

Of particular interest is ALLBAND which prints a report showing progress for all bands and modes in columnar format.

AWRDNEED is invaluable for paper chasers. It shows all QSOs with each unconfirmed entity. For instance, suppose that you do not have a card from Indonesia. This report will show all QSOs with Indonesia, in reverse chronological order. You will then use this report to review your log and try to get a card from one of the listed station.

13.8. Modifying Reports

All reports included with LOGic Jr. and LOGic 4 were written with LOGic 4's report writer. This facility is not included with LOGic Jr. However, LOGic Jr. customers may change the default select criteria. DOS users may also change default printer driver, default printer device, and CPI. Select Modify Report from the **Report** menu.

XIV. MAINTENANCE, IMPORT, EXPORT, and MISCELLANEOUS TOPICS

14.1. Maintenance

Like any fine piece of equipment, LOGic will work best if you spend a few moments to periodically maintain it and your computer. Perform these steps at least monthly:

•Execute the CLEAN command. This deletes all index and temporary files. LOGic will rebuild them the next time it is run. You must not be running LOGic when you execute this command! If you attempt to execute CLEAN while LOGic is running, no damage will be done. CLEAN will just not be able to do its job, and LOGic will probably crash. Windows users double-click the CLEAN icon. DOS users type CLEAN at the DOS command line prompt while in LOGic's home directory.

•Execute the Memo Pack option. This is accessed from the Maintain Database option of the Utilities menu.

•Run the DOS SCANDISK command or other similar utility. This will keep disk errors from accumulating and eventually corrupting data.

•Run the DOS DEFRAG command or another similar utility. This will keep your hard disk operating at maximum speed.

14.2. Import/Export

LOGic will import data from most other commercial software packages. From the Ham Setup menu, select Import, and choose the desired program from the file selector, and follow the instructions displayed on your screen. After importing data, be sure to do an Awards Progress update.

If a program for your data is not provided, or you have your data in a homebrew database or other general-purpose data manager, contact PDA. We frequently write new import programs, and can assist with importing data in almost any form, and will gladly assist you in importing your data.

LOGic data can be exported in a number of formats that can be accessed by spreadsheets, data managers, etc. Select the EXPORT program with the Miscellaneous Utilities option. You may select from a number of different formats, and specify a select criterion so that only a subset of your data is exported.

14.3. Miscellaneous Utilities

LOGic includes several programs that may be accessed with the Miscellaneous Utilities option of the Ham Setup menu. These do neat things like remove duplicate QSOs from you log, execute the Copy from Previous QSO feature in batch, fill in missing countries, zones, and states, export your log data, etc. Each utility includes instructions which are printed on the screen.

14.4. Bug Reports and Enhancement Requests

Personal Database Applications is responsive to customer suggestions. LOGic 4 is largely the result of hundreds of suggestions received from customers over a five-year period. If you have an idea that

would make LOGic a better product, please share it with us. Describe why you want the enhancement and how you envision it being implemented. When considering which improvement requests to implement, we look at how beneficial the change would be to other users, the expense involved in making the change, and how the change will affect system requirements and performance.

When reporting a program error, tell us exactly how to reproduce the problem. If you receive an error message, be sure to record it before calling us. Send screen prints, your data on a diskette, or whatever you think would help us isolate and correct the problem. Please read any relevant parts of the manual to make sure you are using the program correctly and understand its limitations. When reporting a documentation error, please copy the inaccurate material, and explain why it is erroneous, unclear, or incomplete.

14.5. Troubleshooting

Here are some suggestions to follow if LOGic displays unanticipated errors or does not function properly.

•If you suddenly start experiencing problems, and have recently installed another product, reconfigured your system, or have done anything else that could affect your system configuration, review the installation instructions for LOGic, and make sure that your system still conforms to these specifications. Most calls that we get when "LOGic suddenly stops working" are due to improper configuration.

•Make sure that your data is in good shape. Execute the CLEAN command as described earlier in this chapter. If indexes become corrupt, LOGic will usually detect and repair them. However, if the header of an index file becomes damaged, LOGic cannot repair it. The CLEAN command will delete all index files. LOGic will make new ones the next time it is run.

•If none of the above steps fix the problem, try the INITIAL command. This does everything the CLEAN command does, and additionally removes LOGic's setup information. Your data is not affected. You will have to enter the information in the General Options and General Ham Setup screens again. Windows users double-click the INITIAL icon. DOS users type INITIAL at the DOS command line prompt while in LOGic's home directory. You must not be running LOGic while you execute this command. See CLEAN for more info.

•Follow general troubleshooting procedures. Install a temporary copy of LOGic in another directory on your computer. If the temporary copy works, something is wrong with your "regular" installation. You will probably solve the problem by reinstalling LOGic. Be sure to keep a copy of your log data! Use LOGic's backup facility, or copy LOG.DBF and LOG.FPT to a safe place.

•Try clean-booting your system. By this, we refer to removing all drivers and resident programs from your CONFIS.SYS and AUTOEXEC.BAT files. If LOGic runs, you have a conflict with some other piece of software. The online documentation contains an excellent article on troubleshooting, which is great unless you cannot get LOGic to load!

•Problems with interface to serial devices (LOGic 4 only) such as radio interfaces TNC's and multimode controllers, and Rotor Interfaces are almost always due to hardware problems. Double-check port numbers, IRQs (you cannot have two devices sharing an interrupt). IRQ conflicts can cause system crashes and erratic behavior. If you experience crashes, try disabling all serial devices. Also check the obvious--make sure everything is plugged in and working. We have gotten several calls about printer problems, and it turned out that the printer had died. Try your non-functioning hardware with another piece of software if possible.

Page 60. LOGic Jr. and LOGic 4 basic operation.

XV. INDEX

LOGic 4

PC POWER FOR YOUR SHACK

ADVANCED OPERATIONS

Tech Support: 404-417-1899
Fax: 404-449-6687
Orders: 404-242-0887
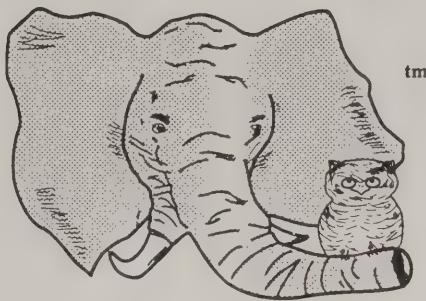
ℭℴℴ PDA Literacy Award

On my word of honor as an upstanding member

of the amateur radio community, I

----

do certify that I have read the entire
LOGic 4 manual.

Note: Anyone who lies about this will grow warts
on his/her nose, develop webbed feet, and lose all
her/his body hair.

TABLE OF CONTENTS

I. *LOGic 4*

LOGic 4 incorporates all of the features of LOGic Jr., and sports many advanced features such as a packet cluster/data terminal, CW keyer, sound card support, rig control, integration with callbook databases, advanced control over features such as **copy from previous QSO**, and a sophisticated report writer. It is the most sophisticated and powerful ham radio software available.

This manual covers these advanced features. Before trying these features, please familiarize yourself with the *LOGic Jr. and LOGic 4 Basic Operations* manual and LOGic 4's basic features.

The online help contains all information specific to various third-party products--rigs and callbook databases in particular. It also contains many other details on advanced features not found in this manual. Be sure to look at the online help for valuable information.

"IT WON'T RUN LOGIC!"

II. RADIO INTERFACING

LOGic will interface to most recent rigs with a digital VFO. This feature adds automatic logging of frequency, band, and mode as well as convenient remote control of the radio.

First of all, you must have the proper hardware to connect your radio to your computer. You will need a free serial port on your computer. Most radios also need a hardware interface to convert the TTL levels of the VFO to the RS-232 levels required by your computer. These interfaces are available from the radio's manufacturer. PDA also sells these devices in high-quality kit and assembled form at a substantial savings. Contact PDA for details.

> *Hosenose says:* LOGic provides full support of COM3 and COM4, complete with user-definable IRQs. However, DOS was not designed to support COM3 or COM4, and setting them up so that they work simultaneously with COM1 and COM2 can be problematic. So, plug your radio into COM1 or COM2 and get it working here first before trying COM3 or COM4. See *HDWETECH: Getting COM3 and COM4 to work* in LOGic online documentation for information on using these ports.

Connect your radio to your computer's serial port as per the instructions included with the interface hardware. *You must know which port you are plugging the radio into!* This information is rarely marked on the computer. Consult the documentation that came with your computer or serial card.

Go to LOGic's General Ham Setup screen. First, enter a list of modes returned by your computerized rig. For example:

SSB,CW,RTTY,AM,FM

Do not enter LSB and USB. Enter SSB instead. When logging information form the radio, LOGic compares the mode you are currently operating with this list. If the current mode is not found, it ignores the mode returned by the radio and logs the mode from the last QSO. This allows you to log modes such as PKT or TOR that do not appear on your rig's Mode switch. For example. suppose you are operating TOR. Your rig's VFO is set to LSB, and LOGic will automatically log SSB. Manually change the mode to TOR. LOGic will continue to log TOR for subsequent contacts. Now, suppose that you start operating CW. LOGic will log TOR for the mode. Manually change it to CW. Since CW is on this list, it will now resume reading the mode from the radio on subsequent QSOs.

Up to four rigs may be connected to LOGic at once. For each rig, enter an interface name. A list of interface programs included with LOGic are available by pressing {F2} while in the interface name field. Select the one for your radio. The Yaesu FT-990 uses the FT-1000 driver. **Press {F1} for information on specific makes of radios.**

Specify the COM port that the radio is plugged into. For ICOM and compatible rigs, enter the radio's address in the Address field.

LOGic normally sets the port up for the baud rate, etc. specified by the radio's manufacturer. LOGic permits you to override these parameters by putting Y in the Custom Port Parms field. You will be prompted for serial port information. This is useful for taking advantage of higher baud rates available on some radios. However, the parameters entered here *must* match your rig and serial board. Use small transmit and receive buffers to conserve memory. Fifty characters for each is plenty for most radios. *Do not* enable handshaking for radio interface ports. Get your rig working on COM1 or COM2 without custom port parameters first.

DOS users may change serial port IRQ (interrupts) and base addresses by selecting **Port Hardware** from the menu bar while in the General Ham Setup screen. Windows users use the Windows control panel. Note that two devices may not share the same interrupt. If they do, neither device will work, and you may experience system crashes or lockups.

Transverter offset provides automatic support of transverters. Simply enter the number of megahertz here to be added to the rig's display to get the true operating frequency. You may set the same radio up twice--once for use with a transverter and once without. This way, you can select the proper transverter mode from the log screen.

If you enter Y for **Enable Interface 1 on Startup?** LOGic will automatically interface to the rig specified for interface 1. Otherwise, you must manually enable the rig before using it.

To use the interface, go to the Log screen. You may select the rig to interface to (or disable the rig interface) with the Select Radio option on the Log menu pad. With a radio interface enabled, LOGic will automatically log the mode, band, and frequency when Real Time mode is enabled. Just enter call and Press {Tab}. You may *set* the mode and frequency of the rig with the Set Radio to Log option. The frequency and mode to set the radio to defaults to those currently displayed on the Log screen, but may be changed.

The VFO Control Screen is actually a database for maintaining lists of frequencies. It works like all other LOGic screens. For each record, you may enter a frequency, mode, category. and comment. You may type this data in, or read it from your radio. You may set you radio to the currently-displayed mode and Frequency. There is no limit (other than available disk space) to how many entries you may put in this file. Use Get and Filter to locate desired entries.

2.1. Troubleshooting

In order for LOGic's rig interface to work, *everything*, the computer's port, cable, interface, and the rig must be functioning. In addition, you *must* specify all setup parameters 100% correctly.

When LOGic tries to read data from your radio, but for some reason receives nothing, it will wait for a few seconds, then give you an error saying that the radio is not responding. The error message will include the port number, interface name, and for ICOM-type radios, the rig address. For ICOM-type radios, LOGic can determine if the hardware interface (CT-17 or PDA's LCU) is responding. You may get an error saying that the interface is responding, but the rig is not. This may help you diagnose the problem.

LOGic's terminal is an excellent diagnostic tool for ports and interfaces. See HDWETECH: Serial Device Loopback Testing in LOGic's online documentation.

III. ROTOR INTERFACING

LOGic will interface to any rotor controller with an RS-232 interface to provide pushbutton positioning of the rotor to the short or long path displayed by LOGic's DX and Direction feature or the DX calculator.

Go to the General Ham Setup screen to set LOGic up to access your rotor. A list of supported rotors is displayed at the bottom of the screen when you are in the Rotor Interface field. Be careful typing the name of the interface. LOGic does not check your input for errors. This allows us to support new rotors by sending you a small external interface program instead of a whole new LOGic program.

Specify the COM port that the rotor is plugged into. You *must* specify the proper serial parameters for your controller. As discussed in the chapter on radio interfacing, get the rotor working on COM1 or COM2 before trying COM3 or COM4. All caveats in the radio interface chapter related to IRQs also apply.

Answer Y to **Reverse?** if LOGic points your antenna in the opposite direction of what it should. This option is usually required for North-centered rotors.

To use the interface, select the Short or Long path option of the Log menu pad. When using the DX calculator, a Rotor menu pad appears that is used to set the rotor to the directions calculated by the calculator. This allows VHF operators to point the antenna to a specified grid square.

Support is provided for antennas mounted at an offset to reduce coupling between antennas on the same boom. Go to the Band Table screen and enter a value to be added to the actual direction calculated by LOGic for the appropriate band(s). A negative number is subtracted from LOGic's calculated direction.

IV. "CALLBOOK" DATABASES

LOGic interfaces to various online callsign databases to provide not only easy access when in LOGic, but easy logging of address info in the log or QSL manager file. Some products support automatic logging of county.

The procedure for installation and configuration varies from product to product. **Documentation for each product is contained in LOGic's online documentation facility.** Go to the General Ham Setup screen and press {F1} while in the CALLBOOK DATABASE field for information on installing supported products so that they work with LOGic.

After your callbook database is installed, it may be accessed from the Log menu pad. `Callbook from log` looks up the station currently displayed in the Edit window. `Callbook from keyboard` requires that you type the callsign of the station to look up. This allows you to look up a station without logging him.

If the information for the requested call is found, it is displayed in a window. The amount of displayed information varies depending on the product used and the country you are checking. In addition to name and address, info such as birthdate, age, year of birth, and county may be displayed. The features available depend on the callsign database you are using. Type `C` to copy this info to the log screen.

To log the address info, select Copy QSO Info to Address from the Log menu pad. Although street address and postal code are not displayed on the Log screen, it will be copied to the Address window.

To log the address of a QSL manager, use `Callbook from keyboard` option of the `Log` menu pad. Type C to copy the info to the address field.

The Callbook feature may also be accessed from the QSL Manager screen.

V. GRAY LINE PROPAGATION REPORT

Propagation is enhanced along the division between night and day that circles the earth. Propagation along this line is referred to as gray line propagation. It is particularly effective on the lower-frequency bands. LOGic includes a powerful facility to help you take advantage of this phenomenon. LOGic's GRAYLINE report (accessed from the Run Report menu) doesn't look as impressive as a GeoChron clock, but it is far more useful for working DX!

This report prints a list of all locations that are on or near the gray line at the same time you are. For each location the distance and direction to that location, whether it is sunset or sunrise at that location, and how many minutes (time-wise), its actual rise or set time differs from yours, is printed. Locations that are close to you may be omitted so that the report will not be cluttered with locations within your own or neighboring countries. Your local sunrise or sunset time, the direction of the sun at rise or set time, and the directions the gray line extends from your QTH are printed at the top of the report.

Before running the gray line report, the sunrise and sunset times in the Prefix table must be fairly up-to-date. Do a DX/Direction update if you have not already done so. Go to the Ham Setup menu, and choose **Sunrise/set Update**. You will be asked to enter the data that the information will be calculated for. LOGic will then proceed to update all sunrise and sunset times in the Prefix table. Some locations are in a state of 24-hour daylight or darkness. The sunrise and sunset times for these locations will be set to 24:00. and the gray line printout will not include these locations.

It is not necessary to update sunrise/sunset times every day. If you update the table for a week into the future (this date is inserted automatically), you will not need to update the table again for two weeks, and the error will be negligible. Likewise, you do not need to run a gray line report for every day you wish to use gray line propagation. You may make a report for sunrise and sunset, and use the report a week before or after the dates the sunrises and sunsets were actually calculated for, and the error will be insignificant.

Go to the Report Menu, and run GRAYLINE. Enter **R** or **S** to specify whether the report will be generated for your sunrise or sunset. **Maximum Time Difference** determines how close the sunrise or sunset time of the various locations must be to be included in the report. You may also change the **Minimum Distance** parameter. Any location that is less than this distance will not be reported.

The Report Writer will proceed to read the entire Prefix table, printing only those locations on or near the gray line. To use the report, listen for the listed countries starting a half hour or so before your local sunrise or sunset time. Do not take the directions printed with each location too seriously. Crooked-path propagation phenomena often cause signals to travel along paths that seem to be related more to the gray line than the great-circle bearing. When you hear a signal you wish to work, try pointing your antenna to either side of the actual direction. Also try pointing your antenna along the gray line in both directions.

VI. EXPRESSIONS AND FUNCTIONS

LOGic 4 allows unsurpassed flexibility in configuration. For example, you may specify which fields to copy from previous QSOs or the Prefix table. This copying may be done *conditionally*--only under certain circumstances. LOGic's contesting system permits you to specify what is to appear on the log printout, what constitutes a multiplier, and how to calculate the QSO points and final score. The function keys in LOGic's terminal program can send variable information from the QSO displayed on the Log screen. You may create your own reports using the same facility that PDA used to write the reports included with LOGic. All of this power is made available to you because LOGic 4 accepts *expressions* to define its operation.

This chapter will discuss expressions in a general sense. These tools are used in a similar manner for all subsequent features that we discuss--copy from previous QSOs and awards table, setting up programmable function keys, contest definition, and report writing.

Expressions. This scary-sounding word was discussed at length in the Select Criteria section of the *LOGic 4 Basic Operations* manual. As you recall, we said that anyone who has ever used a calculator is familiar with expressions. An expression is a set of symbols that define a result. For example, 1 + 1. We then proceeded to discuss *logical* expressions, which define a yes/no true/false answer. We used these logical expressions to print only parts of our log--for instance, all 10M FM QSOs. We also learned that the Filter action uses logical expressions. Please review this section if you are not familiar with it.

LOGic's advanced configuration uses logical expressions. It also uses numeric and character expressions.

6.1. Numeric Expressions

+	Add
-	Subtract
/	Divide
*	Multiply
^	Exponentiation

Fig 1 Numeric operators

As we said earlier, you are already familiar with numeric expressions. You cannot use a hand calculator without them! So, there is not much to discuss in this section. However, since your computer does not have a ÷ or × symbol on it's keyboard, we have to make some adjustments to what we enter for our mathematical operators. For division, use the / symbol. This we are already familiar with. Just think of it as a fraction bar. 22÷7 and 22/7 are equivalent expressions. For multiplication, we cannot use the x character because the program would confuse it with a database field or memory variable named X. Just use a * {Shift+8} instead. All computer programs that allow you to enter a formula--spreadsheets, Windows calculator accessories, etc.-- use this symbol. The + and - symbol are used as expected. ^ is an exponentiation operator. For example, 10^3.

Advanced mathematical operations such as SQRT and trig functions are available. See Functions, page 11.

Of course you can enter a numeric expression made up of only constants and operators--i.e 1+1. However, to do something useful, we would probably want to do math on LOGic's data. Simply

substitute a the name of a numeric field for a constant. For example, `FREQ/1000` would convert the log frequency from Mhz. to Khz.

6.2. Character Expressions

While the number-crunching ability of computers is well-known, most of us buy them to manipulate text. LOGic makes extensive use of character expressions. Just as with numbers, we can use operators to manipulate characters to come up with new results.   For example, the + operator may be used with character expressions. However, you cannot perform math on characters, so the + operator behaves differently. It *concatenates*, or joins together, two character expressions. For example, the expression

        "C" + "AT"

will give the result of **CAT**. As you remember, character constants must be enclosed in single or double quotes so that LOGic will not confuse them with database field names.

It is important to understand that a character value may contain numbers. However, these numbers are stored in the computer's memory in a quite different format than true numeric values. You cannot perform math on a character value. For example, "50"/2 is invalid. However, character expressions containing only digits may be converted to numeric format and vice versa. This will be discussed in the section on functions.

While the concatenation operator can be handy, the real power in manipulating characters come from *functions*.

6.3. Functions

Functions are references to data-manipulating programs that may be included in an expression. For instance, you can use functions to calculate the square root of a number, remove trailing spaces from a database field, or extract a value from a tagged field.

Like other elements of an expression, functions have a unique format so that they will not be confused with database fields or other items. A function has a name that is immediately followed by an open-parenthesis (. Following the (will be zero or more *parameters* followed by a close-parenthesis). A parameter is input to the function on which the computer will act. For example, the expression SQRT(9) runs a program named SQRT that acts on a parameter, which is 9 in this case. SQRT() is used for taking the square root of a numeric value. A parameter may be any expression of the proper type.   SQRT expects a numeric parameter, so SQRT(FREQ), SQRT(A^2 + B^2), and SQRT(FREQ/1000) are all valid uses of SQRT, provided that FREQ, A, and B are valid numeric database fields. SQRT("9") and SQRT(QTH) are invalid because the parameter is of type character.

If a function has more than one parameter, they are separated with commas.   For example, SUBSTR("ABCDE",2,3) extracts three characters from "ABCDE", starting with the second character. This expression yields "BCD".

We can experiment with functions using the Database Commands screen. Simply enter a ? and a space followed by an expression. ? means to display an expression to the screen. Try entering

        ? SQRT(9)

3 will be printed. To make the fields in the log file available to use while testing expressions, type the following command:

```
=USESEL(X_DATADISK+"LOG")
```

Now try ? FREQ and ? SQRT(FREQ).

Here are some popular functions:

TRIM() removes trailing blanks from an expression. It is especially helpful for formatting database fields. For instance, the expression QTH + ", "+STATE would print:

RICHMOND   , VA

TRIM(QTH)+", "+STATE will print properly:

RICHMOND, VA

LTRIM() removes leading spaces from the beginning of an expression. **ALLTRIM**() removes spaces from both the beginning and end of an expression.

LEFT() returns the left part of a character expression. It requires two parameters. The first is the character expression, and the second is the number of characters to return. LEFT(NAME,10) returns the leftmost 10 characters of the NAME field. RIGHT() is similar except that it returns the rightmost *n* characters.

AT() returns the position of one expression inside another.

```
AT("GS","DOGS AND CATS AND PIGS")
```

returns 3. If the first expression does not occur inside the second, 0 is returned. Normally, this expression returns the position of the first (leftmost) occurrence. An optional third parameter will return the position of the *n*th occurrence. AT("GS","DOGS AND CATS AND PIGS",2) returns 21.

LEFT() may be combined with AT() to extract everything up through a specified character. LEFT(LOCATION,AT("|",LOCATION)) will return everything to the left of and including the first | in the Location field. So, if the location field contains **VE PROV:QUE| QUEBEC**, this expression will return **VE PROV:QUE|**. LOGic uses exactly this expression to copy tagged fields from the Prefix table. If no | is contained in the location field, AT() returns 0, and left returns a null character expression.

PADC() centers a character expression by padding it with spaces on either side to make a character string of the specified size. The first parameter is the character to be centered. The second is the length of the string to be returned. For example, PADC("CAT",5) will return CAT centered within a length of five spaces. It will return   CAT   with a space before and after it.

EMPTY() checks to see if a date or character expression is blank or null. It returns logical true or false. For example, EMPTY(NAME) will return true if the Name field is empty. You could enter this expression for a filter on the Log screen or a Select criterion for a report. All blank names would be found. EMPTY() is great for checking to see if a note or address contains something. To check for notes *not* being empty, enter (you guessed it) NOT EMPTY(NOTES).

GET_ITEM() returns the *n*th item from a delimited list. Three parameters are required. The delimiter, the list, and a numeric expression specifying which item to extract. For example: GET_ITEM("/","HOUSECATS/LIONS/TIGERS",2) returns LIONS. If the requested item does not exist, a null character expression ("") is returned.

LOGic includes a whole library of functions for dealing with tagged fields. We will make frequent use of **TAG_VAL**(). It extracts the value from a field containing tagged fields. Two parameters are required: The tag, and the field containing the tagged field. For example, **TAG_VAL("CONT:",COMMENT)**. If the comment field contains:

```
        HAS A 12-ACRE RHOMBIC! CONT:AF|
AGE:50| WORKS MOSTLY CW
```

this expression will return **AF**. If the tag does not exist, a null character expression is returned. Note that this function's return value is always of type character. TAG_VAL("AGE:",COMMENT)/2 is invalid, because TAG_VAL() will return 50 in character rather than numeric format.

MAKE_TAG() takes a tag and a value, and makes a proper tagged field out of them. Two parameters are required: the tag and the value. For example, MAKE_TAG("PFX:","WN4") returns **PFX:WN4|**. Trailing spaces are removed from the second parameter. If the second parameter is blank, MAKE_TAG() returns a null character expression.

TAG_FLD() extracts the whole tagged field--tag, value, and terminator--from a field. TAG_FLD("CONT:",COMMENT) returns **CONT:AF|** from the above Comment field example. It is convenient for copying tagged fields from previous QSOs. A null character expression is returned if the requested tagged field does not exist.

VAL() converts a character expression containing digits to a true numeric value.

VAL(TAG_VAL("AGE:",COMMENT))/2

is a valid expression. It converts TAG_VAL("AGE:",COMMENT)) to a true numeric value.

STR() converts a number to a characters. One parameter is required--a numeric value to convert. There are two optional parameters--the length of the returned result, and the number of places after the decimal to include.

TIME() returns the current system time in 24-hour HH:MM:SS type character format. It has no parameters.

IIF() is a very powerful function. It evaluates a logical expression, and returns one of two expressions depending on whether the logic expression evaluates to true or false. It requires three parameters. The first is a logical expression, the second is an expression of any type to return if the first parameter evaluates to true. The third parameter is an expression of any type to return if the first parameter returns false. For example:

```
        IIF(QSL_RCVD="F","Thanks for the QSL","")
```

This expression, used in a report, will print **Thanks for the QSL** if QSL_RCVD is F. Otherwise, nothing is printed.

MLINE() extracts the specified line from a note or address field. Two parameters are required--the field, and the line to extract. MLINE(NOTES,5) returns the fifth line of the notes field.

CHR() returns the ASCII character for a specified number. For example, CHR(65) returns A. It is especially useful for generating control characters. Try typing ? `CHR(7)` in the Database Command Screen.

EVAL() evaluates an expression contained in a character expression, and returns the results. For example, EVAL("1+2") will return 2.

TYPE() also evaluates an expression, but returns the type of the expression. For example, TYPE("1+1") will return **N**.

6.4. Date Expressions and Functions

So far we have discussed Logical, Numeric, and Character expressions. LOGic also uses DATE expressions. These expressions always result in a valid date or an empty date. The constant for an empty date is **{}**. Date constants are enclosed in squiggly braces. For example, {01/05/1993}. The format of the constant must be the same as selected in the General Options screen.

DATE() returns the current date. It has no parameters.

The **DTOC**() function converts a date expression to type character. The format is the same as set in the General Options screen. It has one parameter--a date expression. For example, `DTOC(DATE())` or `DTOC(QSO_DATE)`.

DTOS() is much like DTOC(). However, it converts the date expression to YYYYMMDD format, regardless of the settings of the General Options screen. For example, DTOS(QSO_DATE). STOD() is the opposite of DTOS(). It converts a character expression in YYYYMMDD format. For example, `STOD("19930131")`.

There are many other functions available. We have discussed only a fraction of the available ones here. A FoxPro or other xBASE book documents others.

VII. DATA TERMINAL AND PACKET CLUSTER INTERFACE

LOGic includes a feature-packed data terminal program and packet cluster interface. This feature may be used not only with TNC's, but *any* serial device. It is great for working RTTY, AMTOR, CW, and other digital modes. You could even use it to dial your modem and log onto your favorite landline BBS. The terminal program features a full-screen and windowed mode, capture buffer, programmable function keys that may transmit variable data from the log screen, alert when any of several predefined character strings are received, and full integration into LOGic's awards progress tracking facility for spotting of not only DXCC countries, but zones, prefixes, oblasts, and *anything* that may be determined from the callsign.

7.1. Terminal Setup

To set up the terminal, go to the General Ham Setup screen and specify the port that the device is plugged into. Make sure that your serial device has full-duplex or echo mode enabled. Otherwise, you will not be able to see the commands you type. LOGic does not support half-duplex local-echo serial operation. The caveats about using COM3 and COM4, as well as IRQs that were mentioned in the chapter on radio interfacing apply here. See page 5. DOS users set the port IRQs and base addresses from the Port Hardware menu pad of the General Ham Setup screen. Windows users use the Windows Control Panel. Get your terminal working on COM1 or COM2 first. Specify the baud rate, parity, stop bits, and handshaking method to match your device. **Make sure your controller is *not* in host mode.**

LOGic supports user-definable transmit and receive buffer sizes for all ports. The receive buffer is used to hold data that is received from the serial device while LOGic is not reading the port because it is doing something else. If this buffer starts filling up, LOGic will send a handshake signal to the device telling it to stop sending. Likewise, the transmit buffer holds transmitted data when LOGic sends it too fast for your device to process. The default values work well, but you may change them if you have a need to. A large receive buffer can continue to receive data while LOGic is running a long report, even if your TNC's memory fills up. However, be careful. These buffers use DOS's 640k main memory, which is always in short supply!

You may specify a list of words that LOGic's terminal program will watch for. For example, your call, a CONNECT message from your TNC, the callsign of a buddy you are looking for, or a subject that you are interested in. Press {F1} for more info on this feature. This feature works for *any* mode--not just packet.

The Spot Level option is used by LOGic's DX spotting. See page 18.

The terminal has an audible CW alert for the watch and packet cluster spotting level. This may be turned off from the General Ham Setup screen.

LOGic always stores the data it receives in a capture window. You may view this data, or cut and paste it into another file. You may tell LOGic to automatically clear the contents of this file every time you start the program.

7.2. Using the Terminal

When you enable the terminal from the General Ham Setup screen, a movable, sizeable Receive Data window appears. Any data received is displayed to this window. If LOGic receives any of the words it was configured to watch for, or receives a DX spot, you will be notified. A message is also placed in the RX data window and the capture buffer.

To transmit data, select `Interactive mode` from the `Terminal` menu pad. The interactive mode causes a full-screen terminal window to appear. The last page of data received will be displayed. Anything you type will be sent to your serial device. Anything received will be displayed on the screen. See the manual that came with your serial device for commands and procedures for using your device. To send a Break signal, press {Home}. {End} exits the terminal. Data will not be sent to the RX Data window while you are in the interactive terminal. However, any data received will be sent to the capture buffer. The watch feature or packet cluster spotting does not work while the Interactive mode is active.

The interactive mode is best for accessing packet BBSs and reading or typing long messages. For short messages and digital QSOing, you will find the `Transmit Packet` option of the Terminal menu pad to be ideal. When selected, a small window appears. Type a message to be transmitted. While you are typing, your device may continue to receive data, which will be displayed in the RX data window. Press {Enter} to send the data in the TX window. Pressing {End} will transmit the contents of the TX window and close it. {Esc} closes the window without transmitting the contents. {Home} sends a Break signal.

Anything you type in the TX Data window is saved in a scrollable redo buffer. This allows easy retransmission of anything typed previously. Press { ↑ } to see previous lines typed. You may edit a line if desired, then print {Enter} or {End} to transmit it. { ↓ } scrolls in the reverse direction. Use it if you press { ↑ } too many times.

To move or resize the TX data window, select the appropriate option from the Terminal menu pad. A dummy TX window will appear. Move or size it to your liking, then press {Enter}.

The `Transmit Words` option of the Terminal menu pad is ideal for character modes such as RTTY or AMTOR. Like Transmit Packet provides separate transmit and receive windows. However, instead of transmitting the whole line when you press {Enter}, it transmits each word when you press {Space}. This allows use of {Backspace} to correct typos, yet transmit while you type. Typeahead buffering is provided by the controller.

See the online help for more information.

The capture buffer contains all data received from the terminal. The `View Capture` option of the Terminal Menu pad displays a copy of the last 30,000 characters of the capture buffer. It is an Edit window, so all search features may be used. You may cut or copy a block of data to be printed or pasted elsewhere. The Save As option of the File menu may be used to save the contents of the window to a different file. Do not attempt to overwrite the CAPTURE.CAP. LOGic has it open at all times so that received data may be added to it even while you are viewing the capture buffer. You may edit this file only when LOGic isn't running. To empty the capture buffer, select the Clear Capture option of the Terminal Menu Pad.

7.3. Function Keys

LOGic's terminal features ten programmable function keys that can insert data from your log. This is perfect for pushbutton generation of standard ragchew or contest exchanges.

The function keys are set up with Edit Screen Configuration. Each screen defined has its own ten function keys. This allows you to set up a separate bank of ten keys for each operating activity or contest. For each key that you wish to program, enter a short description and a *character expression* (see page 11) to be transmitted. Literal values must be enclosed in single or double quotes. For instance:

          "CQ CQ CQ DE WN4AZY WN4AZY CQ DE WN4AZY{CR}"

Note that LOGic *does not* automatically send a carriage return at the end of a function key transmission. To send a carriage return, simply include {CR} in the expression. This flexibility permits you to transmit more than one line with a single press of a function key, or not transmit the line at all so that additional keyboard input may be appended to the contents of the function key. Other control characters or line-drawing characters may be sent by including their decimal value in squiggly brackets. For instance, {7} sends a bell character. Note that contrary to popular opinion, {0}, or null, is not the same thing as a Break signal. A break signal is a hardware alteration of the voltage on the transmit line, and not an ASCII character. A break signal cannot be sent with a function key.

The real power of LOGic's function keys lie in their ability to transmit data from the log file. Simply include the field name in the expression. Press {F2} for a list of fields. Use the TRIM() function to remove trailing spaces from fields. For example:

     TRIM(CALL)+" DE "+TRIM(OPERATOR)+" TNX FOR THE CALL "+TRIM(NAME)+"{CR}"

An example of what this may send:

          NV1L DE WN4AZY TNX FOR THE CALL MIKE
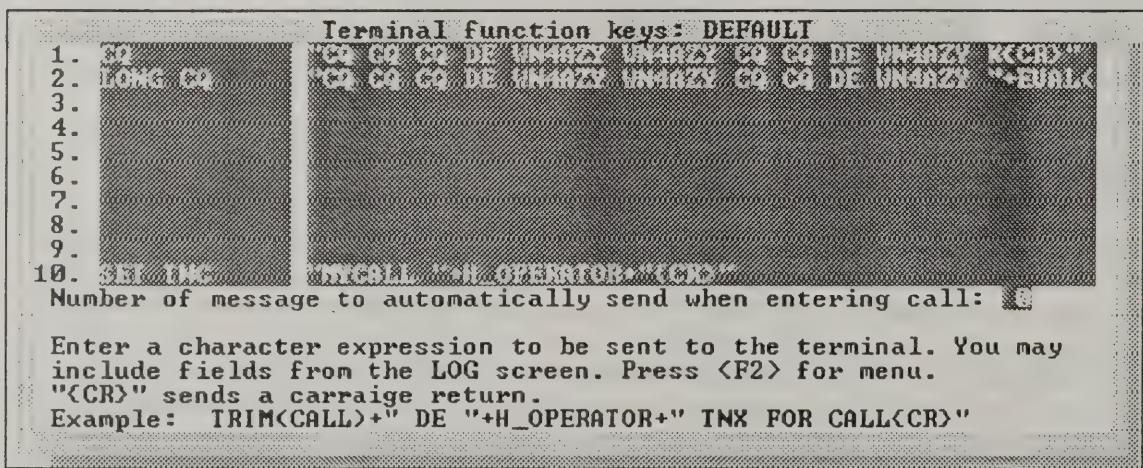
Fig 2 Programming function keys

Note how we used the Operator field for our callsign. This will cause LOGic to send DE followed by the callsign of the operator currently using LOGic. We do not have to change the function key

setup when changing operators! The other operator's name will be transmitted after "Tnx for the call" if his name has been logged or copied from a previous QSO.

We can use the IIF() function to conditionally send a message. For example:

```
TRIM(CALL) + "  DE" + TRIM(OPERATOR) + " TNX FOR THE CALL " + TRIM(NAME) +
IIF(EMPTY(RST_SENT), "", " YOUR RST IS " + RST_SENT) + "{CR}"
```

This sends the message given in the previous example, but appends YOUR RST IS and his signal report if RST_SENT has been logged. You may even use LOGic's time and date functions for setting the TNC's clock at the push of a button!

You may even use one function key to transmit the expression contained in another function key. Simply reference the function key with

```
EVAL(S_FUNCKEYS[x,1])
```

where x is the number of the key to be referenced. For example:

```
EVAL(S_FUNCKEYS[3,1]) + " USING 386SX AND LOGIC{CR}"
```

will send the contents of function key 3, followed by **USING A 386SX AND LOGIC**.

To use function keys once you have programmed them, use the Terminal menu pad or {Shift+F1} + {Shift+F10}. The Transmit window **does not** have to be active. To send function keys while in the Interactive Mode, simply push {F1} through {F10}.

7.4. Packet Cluster DX Spotting

If you have access to a packet cluster station, LOGic will take full advantage of it. It works in conjunction with LOGic's online awards progress check to notify you not only of needed DXCC, but also CQ Zones, ITU Zones, WPX prefixes, Continents, and awards entities such as VE Provinces and oblasts that are stored as tagged fields in the Location field of the Prefix table.

First, get your TNC working with LOGic's terminal. Make sure that you can connect to the packet cluster node. Disable any filters that you have set on the host machine. With LOGic, you will not need to keep the host informed of which spots you do not what. LOGic will compare spots with your awards progress, and filter the unneeded ones automatically. If you have filters set so that unneeded country spots are not announced, it could interfere with LOGic's spotting of non-DXCC awards such as prefixes, zones, etc.

Next, go to the Band Table screen. Here, you can control spot announcement for each band segment. Set the Band table up to accurately reflect your license class. This will prevent announcement of spots that are on frequencies that you are not allowed to operate. Make sure a mode is entered for each band segment you wish to spot. The packet cluster does not send the mode, so this Band table entry is used for determining the mode from the frequency transmitted with the spot.

For each band segment and each award, you can specify all or any of four different conditions that you should be alerted. These conditions are:

•1 Needed on all bands and modes (not worked/confirmed)

•2 Needed this band

•3 Needed this mode

•4 Needed this band *and* mode
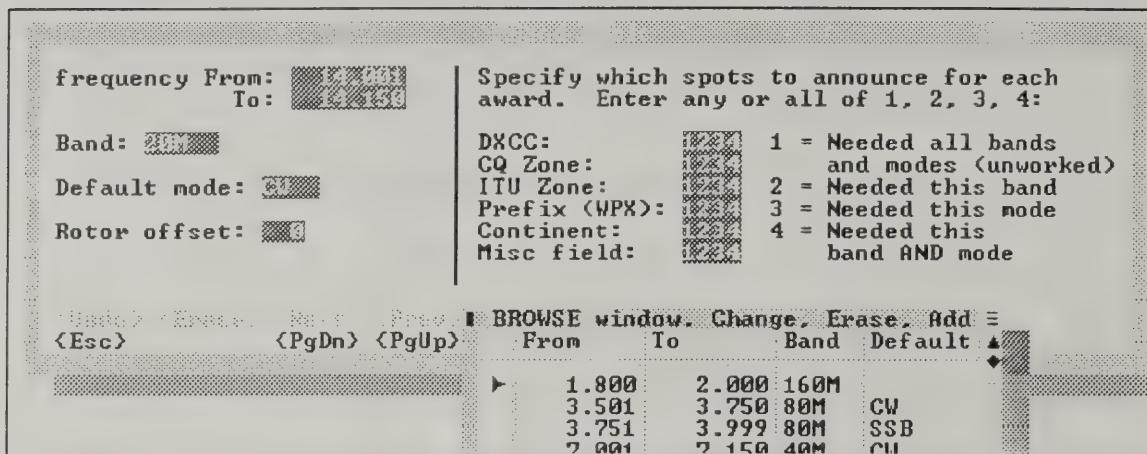
Fig 3 Setting Band screen up for DX spotting

For each award, enter any or all of 1, 2, 3, or 4. For instance, if you are working on mixed band/mode DXCC, as well as a CW-only DXCC, Enter 1 and 3 in the DXCC field for each band segment which you operate. If you are working on a 20M CW award also, add 4 to the 20M CW segment.

You may independently control spotting for DXCC, CQ Zone, ITU Zone, Prefix, Continent (why not get a 5-band WAC on your favorite mode?), and *Misc Field.* Misc field controls spotting of awards entities that are entered in the Location field of the Prefix table. For example, VE provinces or oblasts.

If you added or deleted bands, be sure to do an Awards Progress Update from the Ham Setup menu.

You may also define what constitutes a needed entity. Do you want announcements for everything that is not confirmed (within the constraints imposed by the Band table), or do you want to dispense with the spot if the QSL Rcvd status is R (Requested), or do you want announcements only for unworked entities? Go to the General Ham Setup screen and enter the desired *Spot Level.* You may also select audible CW or voice alert. Press {F1} for specifics.

Now, when a spot is received, LOGic will check your Awards table, and flash an announcement on the screen and in the data window if the entity is needed. The format of this announcement is in the format as the Automatic DXCC progress display, which is described in the *LOGic 4 Basic Operations* manual. The notice will also be recorded in the capture buffer. You will be shown the QSL status for mixed, mode, and band. If enabled, the CW or voice alert will notify you as to the type of award that was spotted--i.e. DX, CQZ, ITUZ, or PFX. For Misc Field spots, the tag will be sent--i.e. OBLAST.

If RTTY or RYRY is in the comment field of the spot, RTTY will be used as the mode. RTTY spots are announced only if RTTY is listed in the modes that you operate in the General Ham Setup screen. If you change the list of modes you work, be sure to do an Awards Progress Update from the Ham Setup menu.

The packet cluster spot feature does not function while using the Interactive terminal mode.

When contesting, the spotting feature spots needed multipliers instead of needed awards entities. Of course LOGic's online awards progress is available while contesting, so you can manually check any spots that is received if you don't remember if you need it for an award.

You may test the packet spotting feature without sending anything over the air by following this procedure: Turn off your transmitter. Put your controller in the Packet converse mode. From the Transmit Packet window, type a dummy spot. For example:

> DX de WN4AZY: 14178.3 BY1XYZ

LOGic will respond just as if it had received the spot over the air.

7.5. Troubleshooting

If your TNC does not respond to LOGic, check to make sure that the controller is not in host mode. Power your controller off then on. You should see your controller's signon message. If you receive only garbage characters, chances are that the baud rate is incorrect. If about half of the characters are incorrect, the parity is wrong. The baud rate and parity of LOGic and your controller must match exactly.

If you receive no characters when powering on your controller, you may have it plugged into the wrong port, or the port could be non-functional due to hardware failure or improper IRQ setup. Or the controller may be in host mode. The problem could also be that the handshaking is set incorrectly. Disable all handshaking, and see if your controller responds. be sure to reenable handshaking.

If you receive garbage characters only sometimes, you are running without handshaking or handshaking is improperly configured. RTS/CTS uses an extra pair of wires to control handshaking. XON/XOFF use special characters to prevent buffer overrun. If you are using XON/XOFF flow control in LOGic, make sure that your controller is also configured to use XON/XOFF. Do not enable more than one form of handshaking in LOGic.

See your controller's manual for information on setting baud rate, etc. and using its various features.

VIII. CW KEYER INTERFACE

LOGic incorporates a CW keyer that transmits Morse code using a parallel printer port and an inexpensive interface. The keyer incorporates programmable function keys, a Compose window for preparing a message to be sent while you are listening to the other station's transmission. and real-time dual-window keyboard transmission with typeahead buffering. Speed, weight, and Farnsworth are adjustable.

To use LOGic's keyer feature, you will need an available parallel printer port, and an inexpensive interface circuit to connect your transistorized rig's key jack to the parallel port. You may build your own using the schematic provided in LOGic's online help, or purchase one from PDA. Interfaces build for other programs may also work. Since the parallel port sits directly on your computer's bus, serious damage could result from stray voltages or RF. The unit sold by PDA is optically isolated for maximum safety.

To enable the keyer feature, enter the printer port which the interface is plugged into in the General Ham Setup screen. Enter 1, 2, or 3, corresponding to LPT1 through LPT3. 0 disables the keyer. A Keyer menu pad will appear on the menu bar when you exit the General Ham Setup screen.

To transmit compound character pairs, precede the characters with a single quote. For example:

'BT   'AR   'SK   'HH

The backslash character also transmits 'BT.

The programmable function keys are programmed like LOGic's terminal function keys. See page 17. It is not necessary to use TRIM() to remove trailing blanks from the LOG database fields. Compound characters may be included in function key expressions.

To include one function key in another, use the variable name S_KEYERKEYS. This example inserts function key 3 in a message.

EVAL(S_KEYERKEYS[3,1]) + " USING 386 AND LOGIC WINDOWS"

See the online help for details on the many features of the keyer that are not covered here. For example, you may easily insert call, RST, etc. in the Compose window with a click of the mouse.

Disable your transmitter when your computer is running unattended. This will eliminate any possibility of your transmitter left in key-down state should a hardware or software failure occur.

IX. LOG SCREEN CUSTOMIZATION

As you saw in the *LOGic Basic Operations* manual, LOGic allows unsurpassed flexibility in setting up your log screen. LOGic 4 customers additionally have full control over the Copy from Prefix table and Copy from Previous QSO feature. These features are configured on a screen-by-screen basis with the Edit Screen Configuration option. As you see, LOGic 4 has an extra window for each of these features.

9.1. Copy from Prefix Table

To control copying of items from the Prefix table, simply specify a character expression, and a field in the Log screen to copy it to. Any expression that evaluates to blank will be ignored. Press {F2} for a list of Prefix fields or Log fields.

Here is a discussion of some possibilities. To copy the DXCC_PFX field of the Prefix table to the country field of Log, enter DXCC_PFX for the from expression, and COUNTRY for the Log field.

To copy something from the prefix table into a user-defined field in LOGic, use the MAKE_TAG() function to create a complete tagged field, and copy the result to the Log Comment field. Let's do CQ Zone. MAKE_TAG("CQZ:,CQ_ZONE) will result in (assuming we are working Zone 20) CQZ:20|. If the CQ_ZONE field in the prefix table happens to be blank, MAKE_TAG() will return a null string, so we will not end up with a CQZ: tag without any value with it in the Comment field.

Copying from the Prefix table may be done conditionally. For instance, you will probably not want to log a CQ Zone for your own country. This will leave more space in the comment field for regular comments. Just use the IIF() function to test a condition, and include a null expression ("") and the expression to be logged as appropriate. For example:

```
IIF(DXCC_PFX="K ","",MAKE_TAG("CQZ:",CQ_ZONE))
```

When logging from the prefix table, LOGic will evaluate the first parameter, which is a logical expression. If it is true (the country is K), a the first expression--a null expression--will be returned. If the logical expression is false (the country is not K), the tagged CQZ: value will be returned. The variable H_MY_DXPFX contains your country as entered in the General Ham Setup screen, so you may substitute H_MY_DXPFX for "K ".

The expression LEFT(LOCATION,AT("|",LOCATION)) will return a tagged field such as VE PROV: or OBL: from the Location field of the Prefix table. If no tagged field is in the Location field, a null expression will be generated. The contents of the Location field will not be copied.

Only four FROM and TO fields are provided for copying from the Prefix table. However, you may include more than one expression to copy to the Comment field by using the concatenation (+) operator to join multiple expressions. Be sure to put a space between each item to be copied. For example:

```
MAKE_TAG("CQZ:",CQ_ZONE)+" "+MAKE_TAG("ITUZ:",ITU_ZONE)
```

The Copy from Prefix Table feature does not actually have to copy an expression from the Prefix table. It can be used to log anything. You can set up a default value for almost any field by copying a literal character expression. For instance, entering R in the FROM expression and QSL_SENT in the TO field will automatically put "R" in the QSL Sent field for all QSOs added.

To automatically log the WPX prefix, use MAKE_TAG("PFX:",WPX_PFX(LOG.CALL)) as the FROM expression, and Comment as the TO field. It is necessary to prefix CALL with LOG. so that LOGic will look in the Log file for the call. When copying from the Prefix table, it normally looks only in the Prefix file.

Setting up USER fields in the Field Layout window does not affect copying from the Prefix table. Do not attempt to copy anything to a USER field. Just copy the value complete with tag and terminator to the comment field, and the value will automatically be placed in any matching USER field.

9.2. Copy from Previous QSOs

You also have complete control over copying data from previous QSOs. Setting this up is done in much the same way as copying from the Prefix table. Specify an expression to copy, and a field to copy to.

If you copy the QTH field, the State field is automatically copied also. You may copy notes and addresses from previous QSOs.

To copy tagged fields, copy the complete tagged field--tag, value, and terminator--to the Comment field. The TAG_FLD() function makes this easy. It searches the specified field for the tag, and returns the tag, value, and terminator. For example, to copy AGE: from a previous QSO, enter TAG_FLD("AGE:",COMMENT) as the FROM expression, and Comment as the TO field.

When you enter a call, LOGic looks for a previous QSO with the station being worked, and evaluates all expressions. If one of them evaluates to blank, it will look for another previous QSO. It repeats this process until all expressions have found a QSO which allows them to evaluate to non-blank, until all previous QSOs have been read, or the limit set by the Maximum Number of Previous QSOs to Scan option is reached.

X. CONTESTING

LOGic 4's contesting system comes set up for many contests. However, it is unique in that it allows you to specify the rules to work and score almost *any* contest. Online dupe and multiplier check is provided, and LOGic's automatic logging of data from the prefix table and previous QSOs is fully supported. The packet cluster spot feature spots needed multipliers instead of needed awards entities, and the Previous QSO window lists only previous QSOs for the current contest. Other than this, all of LOGic's features such as online awards check and beam headings are fully functional. Contest logging is done just like regular logging. You do not have to learn to use another program.

LOGic keeps its contest QSOs in the same log file as the rest of your QSOs. This allows LOGic to count these QSOs towards your awards progress and makes QSL management no different from QSLing other QSOs. Since all log data is kept in the same file, the Copy from Previous QSO function will copy a requested item from a previous QSO that was for a completely different contest, or even from a non-contest QSO.

The contesting system is configured through the Edit Screen Configuration facility. A special screen configuration is created for each contest.

10.1. Using a Pre-defined Contest

Before using a contest that comes with LOGic, or one that you previously defined, you must make a few changes before starting the contest. Use Edit Screen Configuration to edit the screen that corresponds to the contest that you wish to work.

First of all, read the **Description** window. It tells you some specifics for that particular contest, such as which fields to log the received exchange in.

Next, specify the next transmitted serial# to be assigned, or 0 if you do not want to log transmitted serial numbers. Even if the rules do not require sending a serial#, you may want to enable this feature, as it provides a handy QSO count. The figure in this field may be left over from the last time you ran this contest. Enter 1 here to start a new contest.

Set the Start and End dates so that they encompass the period over which the contest occurs. Be sure to use UTC dates. These dates are used by LOGic to separate QSOs from the current contest from QSOs made with the same screen configuration for a previous contest. The End date may be left way off in the future unless you want to score a previous contest.

If you are using packet cluster spotting, enter the bands and modes that should be spotted. If you are not using packet cluster, these fields are ignored. You do not have to blank them. Press {Tab} and save your changes.

Before starting to work a contest, select the **Contest Maintenance** option of the Main menu, and select **Clear Contest Dupe and Multiplier Info**. This will zero any multiplier or dupe info left over from previous contests.

To activate contest mode, just load the contest configuration with the **Select Log Screen** option of the Main menu. Go to the Log screen to work the contest.

If you do not have a computerized rig attached to your computer, be sure to set the proper band with the **Change Band and Mode** option of the Log menu pad to the appropriate band and mode before logging the first QSO, as well as when changing bands and modes. This is necessary because LOGic must know the current band and mode when entering the callsign so that it can do a dupe check.

To check for a dupe without actually logging a station, enter the callsign and press { ↑ }. For a detailed list of the previous QSOs for that station, use the Display Previous QSOs option of the Log menu pad. When contesting, this feature shows **only** previous QSOs for the current contest.

The next serial# to be assigned is shown in the lower righthand corner of the Edit window.

To cause on and off times to appear in the contest log printout, enter *ON or *OFF in the callsign field. Place the proper date and time in the QSO Date and Time On fields.

When working a station that is already in your log, LOGic will display the **Worked before** message as usual. This message **does not** mean that the QSO is a dupe. The message is generated by the Copy from Previous QSO feature, not the duping feature.

If you log a dupe--by mistake or on purpose because the other station insists that it is not a dupe-- LOGic will mark the QSO as a dupe when the contest log is printed. It will not be scored.

A **Multiplier Check** option appears on the Log menu pad while contesting. It works exactly like LOGic's online progress check. You may check individual entities or get a summary.

LOGic places the name of the current screen configuration in the Contest ID field. The fact that this field is not empty identifies the QSO as a contest QSO. LOGic uses this field to locate the proper QSOs when scoring the contest.

If the system crashes while contesting, be sure to go to **Edit Screen Configuration** and fix the **Next Serial# field**. This is updated only when you exit the log screen. However. if you forget to fix this, LOGic will probably catch it for you. When entering the logging screen, it scans the last several QSOs entered looking for one for the current contest. If it finds one, it compares the serial# of that QSO with the next one to be assigned. If there is a discrepancy, it alerts you and fixes the Next Serial# parameter.

If the system crashes or you delete any QSOs, select **Contest Maintenance** and choose **Rebuild Contest Dupe and Multiplier Info**. This completely regenerates all dupe and multiplier info.

10.2. Scoring the Contest

To score the contest, go to the **Report** menu, and run **CONTEST**. A contest screen configuration must be selected. LOGic will read the QSOs for the current contest based on the CONTEST ID field and the dates entered in the Screen Configuration.

All dupe and multiplier info is cleared and regenerated when running the Contest report. It is not necessary to generate it with the Contest Maintenance utility.

LOGic will proceed to print a log of the contest. New multipliers are indicated the first time they are worked. Duplicate QSOs are marked. A score is printed at the end of the report.

DUPESHEET is a report that prints all QSOs in the contest in callsign order. It is used for contests that require such a listing be included with the submission.

You may score an old contest by changing the Start and End dates in Edit Screen Configuration to encompass the dates that the old contest occurred on.

10.3. Disk Submission

You may submit logs for ARRL contests on diskette. Select Contest Maintenance from the Main menu. Select `Disk Submission`. The format of the resulting file is explained in the online documentation.

10.4. Defining Your Own Contest

The power of LOGic's contesting system is that it works in conjunction with LOGic's custom screen layout and user-defined field facility, plus allows you to easily define the rules for nearly any contest. The contests you create are saved as screen configurations, and may easily be reused when this contest rolls around again.

One important rule to remember when setting up a contest: *All information required to score a contest must be logged*, even if the item is not required as part of the exchange. For example, a contest may give more points per QSO if the station being worked is in a continent other than your own. So, you must log the continent. The Copy from Prefix Table makes this automatic. More frequently, DXCC countries count as multipliers, so you must log DXCC in the country field. As you know, LOGic does this automatically in almost all instances. So long as all necessary data is logged, you may create a screen to score it at a later time!

Fig 4 Field Layout for Novice Roundup

As an example, let's set up a contest for Novice Roundup. From the Main menu, select **Edit Screen Configuration**. Select **NR**. We have already set this contest up to save you the typing. However, were you to enter a name of a screen configuration that doesn't exist, you would be asked to verify that you want to create a new configuration. In most cases, it is easier to use the File Manager to copy

an existing contest configuration that is somewhat similar to the new contest that you wish to create, and modify the copy.

First of all, set the **Default RST fields to 599?** to Y in the general options window. Novice roundup requires exchange of signal report, and this will place 599 in the RST fields for you.

Using the Field Layout window, set up the screen with the needed fields. We will use a user-defined field for ARRL SECT: Put the ARRL SECT field first, then the RST fields, then country. We will leave the VIA field enabled so that we can record any managers that DX stations give us.

Many contests permit you to work a station once on SSB and once on CW. In this situation, setting this up is a matter of answering a Yes/No question. Novice roundup is a bit more complicated. The rules allow you to work a station once on a voice mode, and once on a digital mode (CW is considered a digital mode). However, LOGic can handle this with no problem. We will make a NR MODE: tagged field that is one character long, and log V or D in it. We will use LOGic's Copy from Prefix Table feature to automatically fill this field out for us. Set **DUP?** for this field to Y. This will allow reworking a station if the contents of this field is different.

The following expression in the FROM expression of **Copy from Prefix Table** will place D or V in the NR MODE: field automatically:

```
MAKE_TAG("NR MODE:",IIF(LOG.MODE="CW" OR LOG.MODE="RTTY"
        OR LOG.MODE = "PKT","D","V"))
```

Enter COMMENT for the TO field. "D" will be logged for CW, RTTY, and PACKET. "V" will be logged otherwise. We will leave the default entries that copy the DXCC country, CQ zone, continent tagged field in the Prefix table. This will automatically log the country, which is needed for multiplier check and scoring.

For Copy from Previous QSO, all we are interested in is ARRL SECT:

```
TAG_FLD("ARRL SECT:",COMMENT)
```

for a FROM expression, and Comment for the TO field will accomplish this.

We now proceed to define the contest rules. Place Y in the Contest Mode On field of the General window. Fill in the dates as discussed previously. Serial number is not required for Novice Roundup, but you may wish to enable it to provide a QSO count.

Select the **Contest** menu pad. Windows that allow us to specify the contest rules appear. The Miscellaneous Contesting Parameters window asks us if a station can be reworked on different bands and modes. We must answer N to both of these. The rules do not allow us to work a station on different bands. We must answer N to Modes also. If we answered Y, LOGic would treat CW, RTTY, and PKT as separate modes. This is why we are duping on a user-defined NR MODE field.

The contest report automatically prints callsign, dates, times, and RSTs. We can add two other columns. For Novice Roundup, we must report ARRL SECT. Use the MAKE_TAG function to extract this. Use

```
TAG_VAL("ARRL SECT:",COMMENT)
```

for the expression. Enter ARRL SECTION for the column heading.

```
 Tell LOGic what comprises a duplicate contact:
 Can the same station be reworked on different bands?
 Can the same station be reworked with different modes?
 Enable real-time dupe checking?


 Enter Exchange Field one expression for contest report:
 THE_UNIT,"ARRL SECT:",COMMENT

 Enter column heading:  ARRL SECTION

 Ent
      1. Tag            Multiplier Expression:
         ARRL SECT:     THE_UNIT,"ARRL SECT:",COMMENT
 Ent  Val: 1.00         Descr: ARRL SECT:  Band?  Mode?   Max pts:

      2. Tag            Multiplier Expression:
         DXCC:          LIF("ARRL SECT:",COMMENT,"","",COUNTRY)
      Val: 1.00         Descr: DXCC:     Band?  Mode?   Max pts:

      3. Tag            Multiplier Expression:
 Ua
                               QSO Points: NR
      1. Use this score if:
 4.   FIX_UNIT("NR","MODE")=="COMMENT"="DY"
 Ua   QSO points:  2.00             Description: DIGITAL

 Ua   2. Use this score if:

 En   QSO points:                   Description:

      3. Use this score if:

      QSO points:                   Description:

      4. Use this score if:

      QSO points:                   Description:

      Default score:  1.00
```

Fig 5 *Setting up the rules for Novice Roundup*

Next, define the multipliers. Enter a tag for each multiplier to be tracked. If this tag exists in the Awards table, we will be able to list unworked multipliers while logging. If no list of multipliers exists on the Awards table, just make up a new tag. Multipliers added for this tag will automatically be added to the awards table so that you can get a list of multipliers that you have worked. For Novice Roundup, the multipliers are ARRL Section and DXCC country.

Let's set up the ARRL Section multiplier. Enter ARRL SECT: for the tag. LOGic will mark our multiplier progress in an internal field of the ARRL SECT: records of the Awards table. Next, enter a character expression that results in an ARRL Section. Again, we will use the TAG_VAL function:

        TAG_VAL("ARRL SECT:",COMMENT)

If no ARRL Section is logged, TAG_VAL returns a null expression. LOGic ignores blank multiplier expressions.

In VAL, enter the number of multiplier points for each multiplier worked. This is 1 for most contests. But if the rules allow you to multiply the QSO points by two or three (or more) times the number of multipliers worked, LOGic can handle it.

If a contest counts a multiplier on each band or each mode, place Y in the appropriate field. Novice Roundup counts a multiplier only once, so leave these fields set to N.

Some contests allow a maximum number of points for a given multiplier. If this is the case, enter that number here. Otherwise, leave the default huge number.

For the DXCC: multiplier, enter DXCC: for the tag. Setting up the DXCC multiplier is a bit more complicated, since a QSO with an ARRL Section does not count as a country multiplier. We can use IIF() in conjunction with the logical expression

        "ARRL SECT:"$COMMENT

to see if an ARRL section is logged. If there is, we simply return a null character expression. Otherwise, return the country. Here is the complete expression:

        IIF("ARRL SECT:"$COMMENT,"",COUNTRY)

The **Enter tag for country spotting:** field is normally set to **DXCC:**. However, for contests where only certain countries count as multipliers--for example, all countries in North America--you could enter a new list with a different tag (DXCC NA:, for example). Enter that tag here, and LOGic's
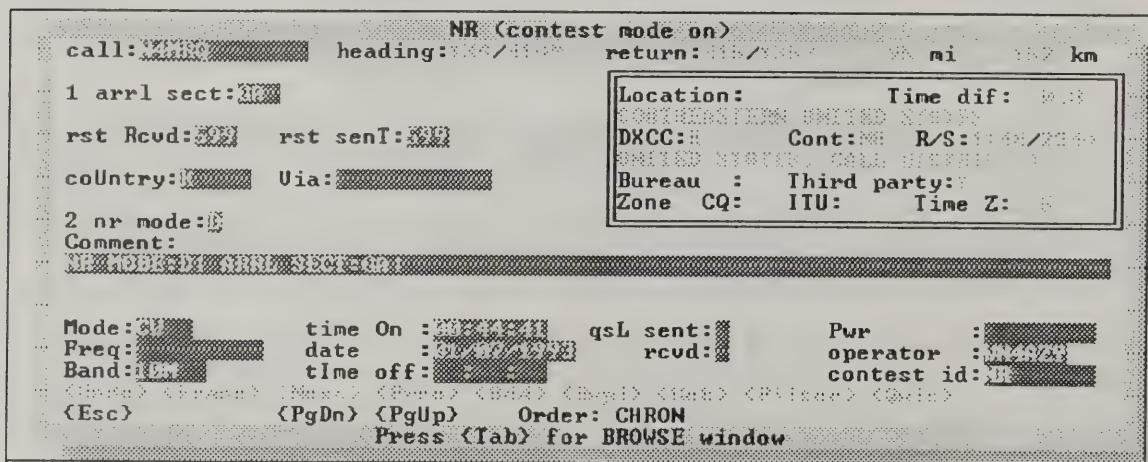
Fig 6 Novice Roundup screen in action

packet cluster spotting will spot only countries on the new list.

The QSO Points window allows you to define how many points to assign to a QSO. Four sets of logical expressions and point values are provided. When scoring, LOGic evaluates each of the logical expressions, and adds together the point values for the expressions that evaluate to true. If *all* expressions evaluate to false, the points in the **Default Score** field is assigned. For Novice Roundup, we get 2 points for a digital QSO, and 1 point for a voice QSO. For the first logical expression, enter:

        TAG_VAL("NR MODE:",COMMENT)="D"

Enter 2 for the QSO points. To handle Voice QSOs, simply put 1 in the **Default Score** field. We could handle voice QSOs by entering TAG_VAL("NR MODE:",COMMENT)="V" for the second expression, and 2 for the second **QSO Points** field, but simply specifying a default for non-digital QSOs is easier.

If a contest allows working a station for multiplier points, but not QSO points, enter an expression for each possible scoring condition, and enter 0 in the **Default Score** field.

Press {Esc} to exit the contest windows.

Finally, enter some notes and instructions for working the contest in the Description window.

Hosenose Says: Confused? Not to worry. This gets easier with practice. For the faint-of-heart, we will be happy to set up the contest for you. Just send us the contest rules and allow plenty of lead time for us to get the setup back to you.

He who never tries never learns. If you made a mistake in your contest configuration, you can go back and fix it, and score the contest again.

"Hello? PDA Tech Support? My antenna rotor is connected to LOGic and I have a problem. I can't get my SWR below 3.5:1. . ."
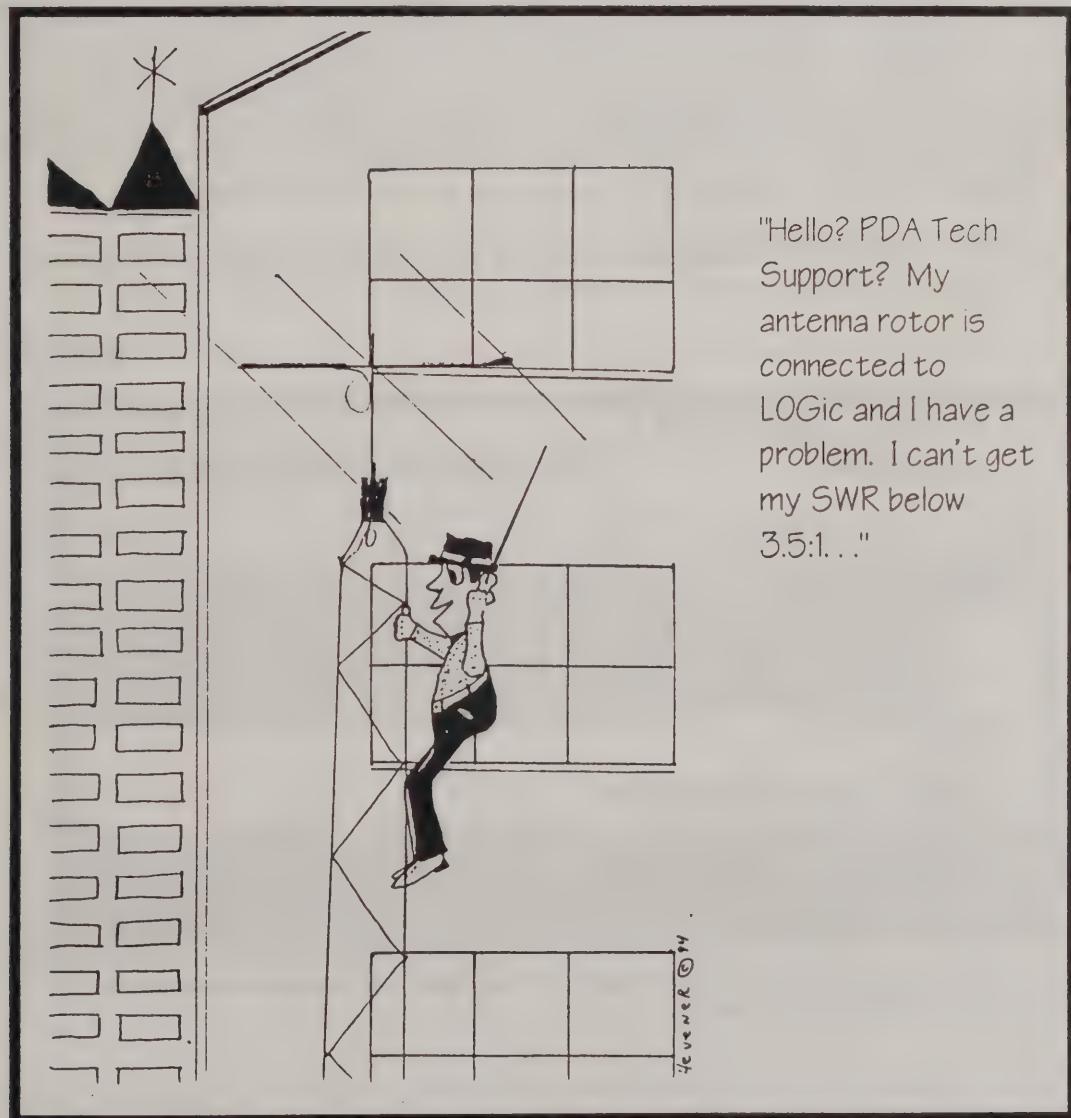
XI. REPORT WRITER

LOGic 4 includes a sophisticated reporting facility that allow you to create your own printouts. All reports included with LOGic were created with the report writer. It supports user-selectable ordering, data grouping, counting, and totaling. The label facility creates multiple-across label reports. Those who know xBASE programming may integrate xBASE commands into their reports for the ultimate in power.

Most users will not need all of this power. However, everyone will probably want to move a field or make some other change to the appearance of the printout. LOGic's WYSIWYG (what you see is what you get!) layout makes this easy.

When making changes to a report, make a copy of your original PDA report, and modify the copy. This way, you will have your original to go back to if you run into difficulty in your modifications. Likewise, if you are creating a new report, it is usually easier to copy something that is similar to what you want and modify it.

When creating a report from scratch, you will be asked if you want to create a Report, Label, or Stamp. Usually, you will use Report. This allows the most flexibility in setting up your report. Label allows printing of multiple-across labels. Stamp is an electronic rubber stamp for printing things like return address labels. Labels and Stamps will be discussed at the end of this chapter.

Although a mouse is not necessary for using the DOS report writer or any of LOGic's other features, it is especially helpful when writing reports. A mouse is required for the Windows report writer.
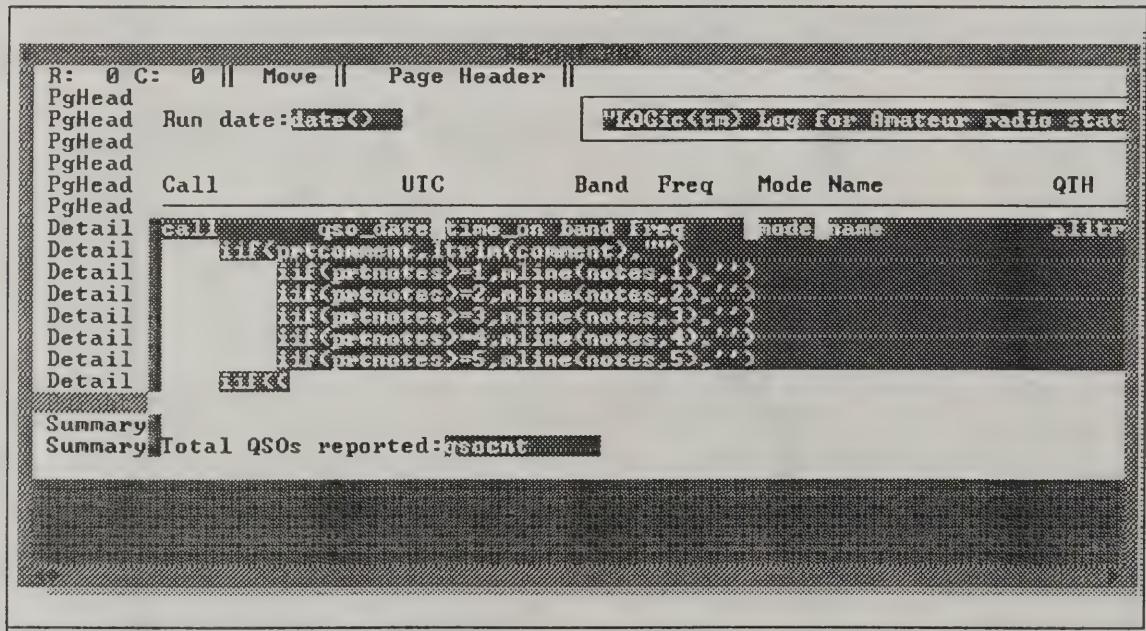
Fig 7 Report Layout window with Log report

The Windows report writer is a graphics application that is much like a desktop publishing program. All reports are printed in Graphics mode. You have precise control over placement of objects, font size and color, and more. See the Object menu pad. A grid and snap-to-grid feature are available to help you position objects in neat rows and columns. See the Report menu pad.
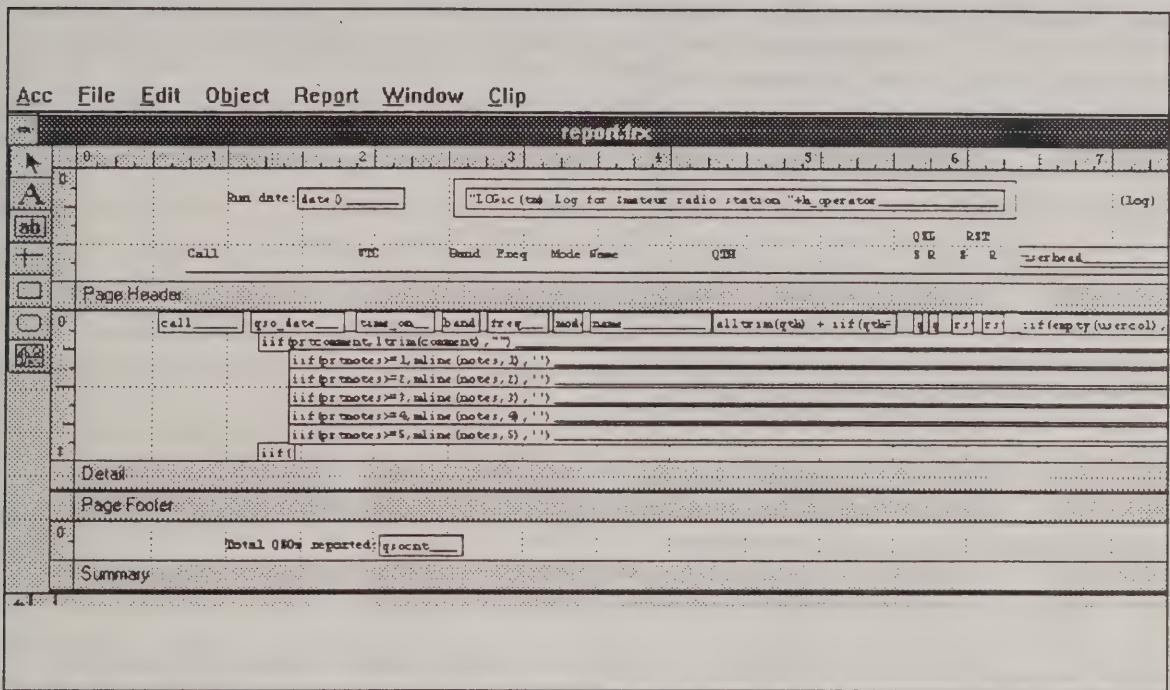
Fig 8 Windows report writer with Log report

11.1. Layout

Let's experiment with making changes to a report's layout. Using the File Manager, make a copy of LOG. Name the copy MYLOG. Now, select **Modify/Create Report**, and select **Layout**.

You will see a window with a representation of the log report in it. There are *bands* representing the title, body, and footer of the report. Windows users may adjust the size of bands by dragging the small rectangular area to the left of the text marking the band. For precise adjustment, double-click this area. DOS users adjust the size of bands by adding or deleting lines using the REPORT menu pad. In the bands are *text* items, such as the report title and column headings, *graphics* items such as lines and boxes, and *expressions*, such as Call, QSO_DATE, etc. Since the report is wider than the screen, you will have to pan to the right to see it all.

Let's reverse the position of the Call and the Date/Time fields. Using the mouse, drag the Call field from the first line of the Detail band out of the way. You may move it up to the Header band for now. Next, move the QSO_DATE and TIME_ON fields to the left. Then, move the Call field to the place previously occupied by the QSO_DATE and TIME_ON fields. Finally, reverse the positions of the Call and UTC column headings in the PgHead band. You may review the results of your handiwork by selecting the Page Preview option of the Report menu pad.

Deleting an item is even easier. Single-click on an item to select it, then press {Del}.

You may select a group of items to move or delete by placing the mouse pointer on a spot that is not on top of an item, pressing the left button, and dragging the cursor. As you drag the cursor, a box or

line composed of dots will be drawn. When you release the button, everything inside or touching the box or line will be selected. To select individual items, hold down the {Shift} key while you click on items to be selected. To delete all active items, just press {Del}. To move all active items, drag one item as usual. The rest will follow.

11.1.1. Text Items

Text items are printing that does not change according to the information in your database. For example, report titles and column headers.

Windows: Select the Text tool from the toolbar. The text item is represented with a capital A. Move the text cursor to where you want your text to appear, and type the text. When done, select the pointer tool (an arrow) from the toolbar. The font, style, color, etc. may be selected from the Object menu pad.

DOS: Move the cursor to the desired position and start typing. Press {Enter} when done. You may enable print enhancements such as bold by double-clicking the item, and selecting Style. A menu of options appear. You may also enter a comment for the item. This comment doesn't print. It is just for reference. Keyboard users may activate this menu by placing the cursor on top of it, and pressing {Enter}.

11.1.2. Graphics

The report writer will print lines and boxes. Windows users may additionally print bitmap graphics.

Windows: From the toolbar, select the box, box with rounded corners, or the line (two crossing lines) from the toolbar. Create a box by dragging the mouse while holding the button. Line weight, color, fill pattern and color may be selected from the Object menu pad. You may resize a box or line by dragging its handles.

To print bitmap graphics, select the picture tool (a desert scene) from the toolbar. Create a box as described above. You will be prompted for the filename of the graphic to print. The graphic must be in BMP or RLE encoded BMP format.

DOS: press {Ctrl+B}. A small box appears. Move the lower righthand corner by dragging it with a mouse. To make a line, just drag the lower righthand corner so that it is to the right of or below the upper lefthand corner. Keyboard users use the arrow keys. Press {Enter} when the box or line is the desired size. Double-click the box or line to select style. Keyboard users place the cursor on the box or line and press {Enter}. To resize an existing line or box, hold down the {Ctrl} key while dragging the lower righthand corner. Keyboard users place the cursor on the line or box, then press {Ctrl+Enter}. Resize with the arrow keys. Press {Enter} when you are done. A line or box is moved exactly like other items.

11.1.3. Expressions

An expression is any variable information to print. Typically, it is a field from a database file.

Windows: Select the expression (labeled with **ab** in a box) tool. Create a box to hold the expression by dragging the mouse while holding down the button. Enter the expression as described below.

DOS: position the cursor at the desired place, and press {Ctrl+F}. To modify an expression, double-click on it, or place the cursor on top of it and press {Enter}.

Windows and DOS: A box for entering an expression appears. Selecting the <Expression> button causes the expression builder to appear. This is the same menu that appears when modifying LOGic screens. The larger field makes typing long expressions easier. You may print character, date, or numeric expressions.

For each expression, you may specify a style. You may also report calculated values such as totals and counts. Counts and totals typically appear at the end of the report. The *Width* field specifies how long the printed field should be. If it is shorter than the expression result, the result is truncated to the specified size. *Format* allows you to determine how the value is displayed. For numeric values, you may use the #, comma, and period to specify the format of a number. For instance,

###,###.##

Other format options such as *blank when zero* are provided. Also note how we specify a format for the TIME_ON field:

@R ##:##:##

Even though TIME_ON is a character field (it must be able to contain blank as well as 0), we can use a format for it also. The @R tells the report writer to insert the colons in the time, rather than overwriting.

Suppress can be used to blank repeated values to make the report more readable. The Log report does this with the QSO_DATE field. If the user selects Chron for the order when running the report, the date will be printed for the first QSO for that day only. Select Reset End of Page to make sure that the date prints for the first QSO on the page, even if the previous record was on the same date.

Stretch Vertically causes the band to adjust the number of lines of the band when printing notes and addresses. Float as Band Stretches causes an item in a band that may vary in size because Stretch Vertically was chosen to be printed on the line below the stretches field. If this item is not selected, a stretched field may overwrite it.

_PAGENO used as an expression returns the current page number in type numeric. **_PAGENO** is a variable. It is accessed like a database field. However, it is not stored in a database, but in the computer's memory. The report writer automatically stores the proper page number here.

11.1.4. Page Layout

Under the Report menu pad is a **Page Layout** option. This is used to specify the size of the form that the report will be printed on.

Windows: The page size is determined by the Windows printer driver currently installed. You can select the default font, number of columns, spacing between columns, and margins. Page setup for Windows is considerable easier than for DOS, since you do not need to be concerned

DOS: Specify the number of lines and number of columns. Standard report widths are 80, which fills an 8 1/2" wide form at 10 CPI (characters per inch), 96 which fills the same page at 12 CPI, and 132, which fills the page at 17 CPI.

Page Length is 66 for standard 11" forms printed at 6 LPI (lines per inch). The printer driver normally disables perf skip. This allows the program to control form positioning and is necessary for printing labels on dot-matrix and daisy-wheel printers.

You may also set top and bottom margins. 0 starts printing at the line where the print head is positioned, and is acceptable for most applications including printing to laser printers. Specify a bottom margin of at least 2 lines. Otherwise, the printing will overlap the page perforation and the top of the next page. Laser printers will need more. If the last line of a report is not printing on a laser printer, increase the bottom margin.

Use **Printer Indent** to leave more left margin on the report. But be careful--everything will be moved to the right by the number of columns you specify, decreasing the right margin and possibly making the line longer than your printer can handle. Most dot matrix printers can print an extra 3 characters beyond the standard 132 in 17 CPI mode.

The options in the **Environment** box are not used.

The **Options** pushbutton accesses some nice features. **Suppress blank lines** causes detail lines that are blank to not print. We use this feature with the Log report so that notes and comments are not printed if not requested. If you want to print a blank line with this option turned on, print the expression CHR(0). This prints a null character. It does not evaluate to blank, but nothing is printed. The Log report does this to print a blank line after the notes and comments, but uses IIF() to print the null character only if the user requested that notes and addresses be printed.

Plain Page suppresses printing of the page header on all but the first page.

If **Summary Report** is chosen, the detail lines of the report will not be printed.

Add Alias causes the Expression builder to specify the name of each field that you select from the field menu. For example, LOG.CALL. When writing a report that accesses multiple files, there is one master, or default file. You *must* specify the file with fields from files other than the master. Specifying the file for the master file is optional. LOGic reports do not require that you access multiple files.

The **Eject Before** and **Eject After** options are ignored.

11.1.5. Bands and Data Grouping

We have seen that the Log report has three bands--Page Header, Detail, and Summary. A band is an area of the report. A shaded Page Foot is also displayed in the layout window. However, since we have entered nothing on this line, the report will not have a page footer. We could use this band to print something at the bottom of each page.

The **Report** menu pad may be used to create or modify a **Summary** or **Title** band. A Title band prints once at the beginning of the report. It may be a simple one-line title, or a paragraph explaining the report. A Summary prints at the end of the report. It is typically used for totals. The Log report prints a count of the number of QSOs printed. You may select a New Page option for Title Summary.

In addition to the bands discussed thus far, you may also have **Group Header** and **Group Footer** bands. In order to do this, you must first order your data by some item. For instance, if your log data is in chronological order, you could tell the report writer that your data is grouped by QSO_DATE, and have the date print in a header above each date group instead of in a column with each QSO. LOGic's Contest report does this. To group your data, see Indexes, page 38.

You may also have a Group footer. It may print counts or totals below a group, or simply print a blank line or two to make the report easier to read. A band may be any number of lines. You may use the Report menu pad options to add and delete band lines. To print a blank line, enter

" "

as an expression anywhere on that band line.

To specify a group, select the **Data Grouping** option of the **Report** menu pad. Select Add. Enter an expression that specifies how the data is grouped. For instance, QSO_DATE. *Note that specifying a group does not actually group your data. It merely assumes that the data will be in this order when printing. You must use indexes (see page 38) to actually order the data.* The Page Preview option does not order your data. Therefore, group headers and footers will appear at random throughout the display.

Several options are available for groups. **New Page** causes each new group to begin on a new page.

Swap Page Header starts the group on a new page, and substitutes the group header for the page header on the first group of the page. **Swap Page Footer** does the same thing with group footers. In order for swapping to occur, the two bands must contain the same number of lines.

Reprint Header causes the group header to be printed on all pages if the group spans more than one page.

Reset Page Number causes each group to begin on a new page. Additionally, the page number is set to 1.

# of Rows Following Header prevents orphaned group headers. An orphaned header can occur when a group header is printed near the bottom of the page, and there is no space to print any more detail lines. This option specifies how many detail lines must follow the header. If there is not enough space left on the page for the group header and the specified number of detail lines, the group is started on the next page.

Several groups may be created. Multiple groups are nested. For example, the second group specified is a subgroup of the first. You may reorder multiple groups by dragging the ‡ symbol with the mouse, or holding down the control key and pressing the { ↑ } or { ↓ } keys.

11.1.6. Variables

The **Variables** option of the Report menu pad allows you to create memory variables within a report. Variables are used in expressions like database fields. However, they are stored in the computer's memory. They are used to store the results of calculations performed while the report is being printed. They may be printed just like database fields. First, enter an expression in **Initial Value** if other than 0. This value is assigned to the variable before the first record is read. In **Value to Store**, enter an expression. This expression is evaluated after each record is read from the database, but before it is printed. It may be a field name, constant, or a calculation done on a field or fields in the database.

You may perform counting, totaling, averaging, and other calculations on a variable. The variable may be Reset to the initial value at the end of a page or group. Use these options for printing page totals or group totals. The default, **End of Report**, does not reset the variable.

Always enable **Release Variable After Report**. However, advanced users may leave this disabled so that the variable can be accessed by database commands after the report. If you do this, be sure to use the RELEASE command to release the variable.

The variables created with this option do not exist until just before the report starts printing. To create variables for use in database commands, see page 38 below.

11.1.7. Other Layout Considerations

Be sure to try the **Print Preview** option after you make any changes. This not only shows how your report looks, but will find any errors in expressions.

Hosenose Says: Keyboard users type {Ctrl+W} to exit the layout window.

To exit the Layout window, click the close gadget. You will be asked if you want to save the changes you have made. Answer Y. Note that this only accepts the changes made in the layout window. Your report is not yet saved to disk. This happens when you **Quit** the **Modify Report** menu. You may still abandon your changes at that time. Answer N to **Save Environment?** prompt. PDA ignores this option.

11.2. View and Misc

We are already familiar with most items in this window, as they are available to LOGic Jr. customers. There are two options unique to LOGic 4.

View selects the files that will be available to the report. You will be prompted for this when creating a report from scratch. Advanced users may create their own views with database commands. See online help for Views on the Report menu. Select None if you will be opening the file yourself with database commands.

Mode controls the **Single Record/Multiple Record** prompt when running the report. If you select Prompt, the user will be prompted. If you select Single record or Multiple Record, the report will be forced into this mode, and the user will not be prompted.

11.3. Memory Variables

This option allows advanced users to create variables that may be accessed with database commands. Any variables used by database commands must be created here. Typically, these are used to prompt the user for options controlling how the report prints. The Log report uses them to control printing of notes and comment. Specify a name for the variable, and an initial value.

These variables are automatically released when exiting Run Report.

11.4. Indexes

When printing a report, you never want your data to appear in random order. You will typically want your log data to be in Chronological or Callsign order. However, you can order your data by any field or combination of fields.

All files in a database include indexes. These special files are used by the Get action of the screens to locate a requested record instantly. They also cause the data in the Browse windows to be ordered. We can use these indexes to order our reports. A list of index tags, or short descriptions, appear in a window at the bottom of the screen, along with the expression used to create the index. Simply Add an index, and enter the tag in the Tag/description field.

To create an index for an order that does not already exist, enter a description (QTH for example) and an expression. For example, QTH+STATE+CALL. This will order the report by QTH, then STATE, then CALL. This option will appear on the Order menu when running the report. A * will be placed by it to alert the user that he will have to wait while the index is generated.

11.5. Commands

Advanced users may enter xBASE commands in the report to do things like extract data or prompt the user for items to be printed in the report. Commands may be inserted before the files are opened, after the files are open, before each run of the report, after each run of the report, and when exiting Run Report. You may also specify your own commands to open files rather than using a view.

For reference on commands, use any xBASE book, preferably a FoxPro 2 reference. The reports provided with your application provide numerous examples. Nested IF/THEN/ELSE is supported. Other flow control commands such as CASE, DO, and FOR are not. If there is only one line in a command window, be sure to press {Enter} at the end of the line. A command window must contain at least one carriage return. Errors will be checked when running the report.

The **Commands (immediate)** runs the same database command screen that is an option of the Utilities menu.

11.6. Labels

The labels feature permits printing of multiple-across labels. Writing a label is much like writing a report. However, you do not have as many options. The layout window is quite different from regular reports. It allows you to specify the label size and number of labels across. A line appears for each

line of the label. For each line, you may enter one expression to be printed. If you place a semi-colon
(;) at the end of the expression, a blank line will not be printed if the expression evaluates to blank.
The lines below it will be moved up.

DOS users only: When printing labels on a laser printer, you must enable perf skip. This is done by
entering

```
??? S_PERFSON
```

in the Commands before Run window. *Be sure to press {Enter} after typing this line!* A command
window must have at least one carriage return in it.

11.7. Stamps

Stamps are like reports except that they do not access any information from your application's database.
It is used for printing multiple copies of the same text information--for example, return address labels.
Simply enter the text that you wish to print. When running the report, specify how many copies you
want.

XII. INDEX